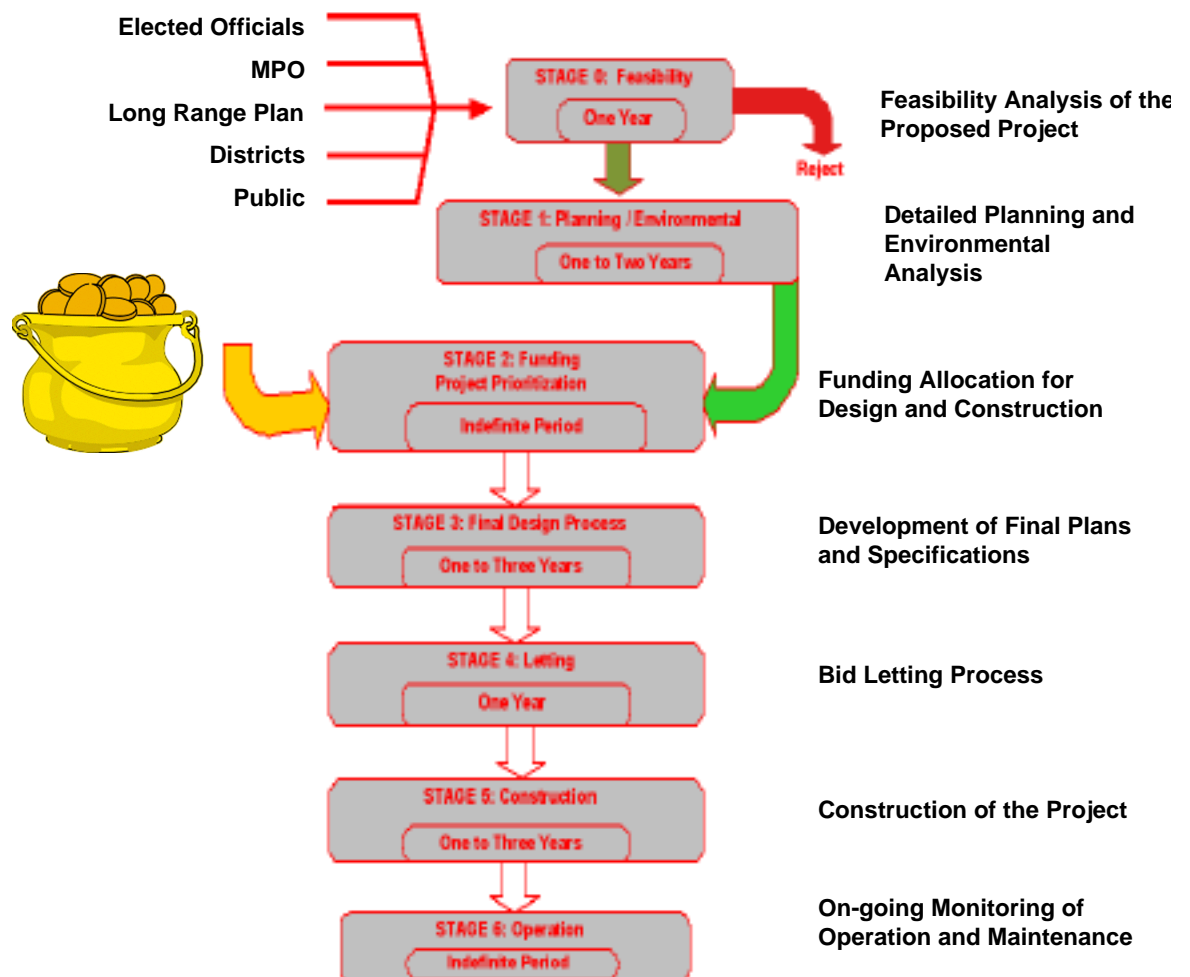




# Program Development and Project Delivery System Manual



*DOTD Program Development and Project Delivery System Manual*

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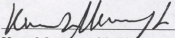
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## Policy Statement

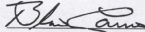
In the continuous effort to better serve its customers, the Louisiana Department of Transportation and Development (DOTD) has examined, evaluated, and modified its existing program and project delivery process. This revision was a combined effort of DOTD administration and several specialized teams. After the individual team efforts were examined to ensure a logical and comprehensive process flow, all of the information was consolidated to become the new DOTD Program Development and Project Delivery System.

This manual documents and details the new system. The manual's purpose is twofold—theoretical and practical. Chapters 1, 2, and 3 introduce the new system and processes and provide a fundamental explanation of the management principles vital to the system's success. The remaining chapters and appended material provide the detailed requirements of each segment of the system, thus serving as a standard operating procedure for individuals with responsibilities in the system.

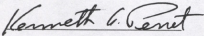
The approval of this manual implements the revised DOTD Program Development and Project Delivery System and supercedes any policy, procedure, and directive in conflict, effective December 15, 2003.



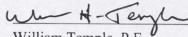
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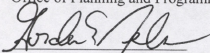
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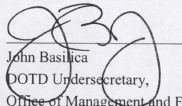
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## **Distribution**

A limited number of hard copies of this manual were produced. The manual can be downloaded from the DOTD web site. Since the electronic version will be revised as necessary, the reader is always encouraged to refer to the electronic version to ensure the most current revision.

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# 1 Introduction

Charged with the responsibility of providing an integrated and efficient transportation system for the citizens of Louisiana, the Louisiana Department of Transportation and Development (DOTD) views its mission as:

**“To enhance quality of life and foster economic growth by planning, managing resources, improving safety, preserving and operating infrastructure, advancing mobility and access, all in an environmentally-sensitive manner.”**

This mission statement not only relates transportation and economic development, but also requires that the department’s activities enhance quality of life and remain sensitive to the environment. The mission statement results in six major goals referred to as the “simple six.” They are:

- Effective planning
- Manage resources
- Improve safety
- Preserve the system
- Operate the system efficiently
- Advance mobility and access

These goals encompass the operation of the department, its organizational structure, and all program priorities and processes. Act 71 of the First Extraordinary Session of the 1998 Legislature provided for the reorganization of DOTD realigning the officers of the department and the appointment, salary, powers, duties, and functions thereof. It also provided for the offices of the department and their respective functions. As a result, DOTD is composed of the Executive Office of the Secretary, the Office of Management and Finance, the Office of Planning and Programming, the Office of Highways, the Office of Operations, and the Office of Public Works and Intermodal Transportation. The officers of DOTD are the Secretary, Deputy Secretary, Undersecretary, Assistant Secretary of Planning and Programming, Chief Engineer of the Office of Highways, Assistant Secretary of the Office of Operations, and the Assistant Secretary of the Office of Public Works and Intermodal Transportation.



One of the major functions of the department is its Program and Project Delivery process, which defines, classifies, and establishes annual and long range programs and projects within the department's budget partition categories of:

- **System Preservation**
  - Structural Repairs and Replacements
  - Pavement Reconstructions
  - Overlays
- **Operations and Motorists Services**
  - Intelligent Transportation Systems (ITS)
  - Automated Vehicle Identification and Weigh-In-Motion (AVI/WIM)
  - Intersection Geometric Improvements
- **Traffic Safety**
  - Hazard Elimination
  - Roadway Shoulder Improvements
  - Roadway Realignment
- **New Capacity**
  - New Roadway Construction
  - Adding Travel Lanes
  - Grade Separations
- **Dedicated Programs**
  - Urban System Program
  - Federal Earmarks
  - Enhancement Program

For many years, DOTD has been directed by the provisions of Act 334 following a Priority Program of highway planning and construction. Each year the DOTD submits to the Legislature a "Program of Construction" to be commenced in the ensuing fiscal year. The "Program of Construction" is based upon the anticipated revenues to be appropriated by the Legislature and listed in order of priority for the projects in each of the budget partition categories. In addition, DOTD annually provides the legislature with a list of projects proposed to be commenced or currently in the various stages of planning and development for the following four years. This list is subject to change by DOTD until the project has obtained an environmental decision; an implementation funding plan is established; project plans and specifications are completed; right-of-way and utility agreements are obtained; and the project is ready for construction.

## **1.1 Traditional Program and Project Delivery Process**

Traditionally, DOTD's main objective has been to deliver an annual program by using all allocated funds for the particular year. The main performance indicator has been to use all available federal dollars. Although this objective is appropriate and the department's accomplishments in this area are commendable, the notion of timely delivery of the scheduled (promised) project has not been the priority in the Program Development and Project Delivery process. Consequently, our customers—the public—have not been satisfied with the department's performance. The public demands that the department deliver scheduled projects:

- On time
- Within budget
- At the highest level of quality
- With a minimum of disruptions

The above criteria apply to the entire project life cycle; i.e., from planning to the end of construction. DOTD's traditional program and project delivery process does not meet these demands of the public. The current process produces projects based on the “just in time delivery” schedule. That is, as projects become ready for construction, they are let into contract without much effort to balance the mix of projects and geographic distribution, or to consider the project's impact on the public before it is let into construction.

Often, projects are selected and added to an annual program without full consideration of the impact of this action on the size of the program and the required capability for its delivery. The traditional development process breaks a project down into specialized tasks that are performed by functional groups in the department. In the vernacular of current organizational thinking, these function groups are often referred to as “silos.” The resulting process is similar to an assembly line. The project leaves the assembly line and enters one of the functional silos. When the work of that functional silo is completed, the project goes back onto the assembly line until it is ready for the next required silo. This process continues until the project is ready to be bid. The project is then bid and constructed using the available funding at the time, while construction project timing, contractor availability, or project impact on the corridor are not routinely considered.

As a result, the traditional project delivery process results in a:

- Program that is too big to accomplish
- Use of funds on projects that will not be constructed

- Project delivery time that is too long and overly flexible
- Disregard for construction timing, contractor availability, and DOTD inspection resources
- Lack of use of innovative financing

## **1.2 New Program and Project Delivery Process**

Committed to meeting the demands of its customers, DOTD has re-engineered the program and project development system. The new system requires DOTD to embrace new processes, concepts, and authorities while divesting itself of traditional organizational structures, methods, and bureaucracies, thus eliminating the deficiencies that have resulted from the traditional system.

This new system was developed by the DOTD divisions and sections that coordinate the program and the projects. The new process defines the classification of projects to be included in the program, employs the concept of program managers, uses a team approach in the entire project delivery process, applies project management principles, utilizes project financing concept, and provides for feedback into the program by the system operators.

Projects are now divided into the following classifications:

- System preservation
- Capacity
- Safety
- Operations
- Other smaller yet critical classifications

Each category and sub-category is labeled as a program containing several projects. Each category has an annual construction and design/development budget with a requirement that project costs do not exceed the annual budget. Chapter 3 details the new project development process.

## **1.3 Key Terms**

Although the entire DOTD Program Development and Project Delivery System is explained in detail in the remaining chapters of this manual, defining a few of the important functions and

terms will improve the usefulness of the manual and help users fully comprehend the system.

**Project Management:** Project management is a systematic process of planning, budgeting, scheduling, staffing, directing, and controlling of a set of related and interdependent activities to achieve a desired objective.

**Program Manager (PGM):** The term program refers to a set of projects that as a whole have a specific purpose and objective. For example, the development of a transportation corridor connecting two major urban centers is considered a program. Such a program usually will consist of a number of related projects that each have an independent utility and purpose but meet a much higher objective in combination.

The program manager (PGM) is responsible for meeting the overall goals of the program and its final delivery. While not directly responsible for each project that is part of the program (unless the PGM is also a project manager), the PGM must be aware of the status of each project and anticipate potential problems that could delay one of the projects in the program. The PGM should assist the project manager in resolving problems that could delay program delivery. At times when a particular project cannot be kept on schedule, it is the PGM's responsibility to review other projects in the program and take necessary steps in making schedule adjustments to ensure the overall goals of the program are not compromised. When conflicting priorities endanger the program's success, the PGM should involve the upper level management in resolving the issues and putting the program back on track.

**Project Manager (PM):** The project manager is responsible for carrying out the individual projects by insuring that all project activities are completed in accordance with time and budget requirements and at the highest level of quality. In some cases, a project manager from the Office of Planning and Programming (PMPP) and a project manager from the Project Development Division (PMDD) will be involved.

**Project Team:** The project team is an assembly of specialists that come together to work on a specific project. Each team member is selected because of their unique talents and capabilities.

**DOTD Highway Selection Process:** A formalized process through which competing projects are prioritized and funded.

**Program and Project Management System (PPMS):** A computerized system for project scheduling, monitoring, and control. The system track project time and cost and produces reports on the project progress.

**Project Plan:** A document summarizing the necessary steps required for the successful management of a project.

**Estimating Process:** A formalized process to provide an accurate estimate of the project cost as the project moves through various stages of development.

**Project Finance Committee (PFC):** This committee's function is to provide a structured and formal financial planning, monitoring, analysis, and decision support service in the improved DOTD project delivery process. This committee is also referred to as the "banker."

**Project Delivery Date (PDD):** PDD is the project design and development completion date. It is the date the project leaves Stage 3 (Final Design Process) and enters Stage 4 (Letting).

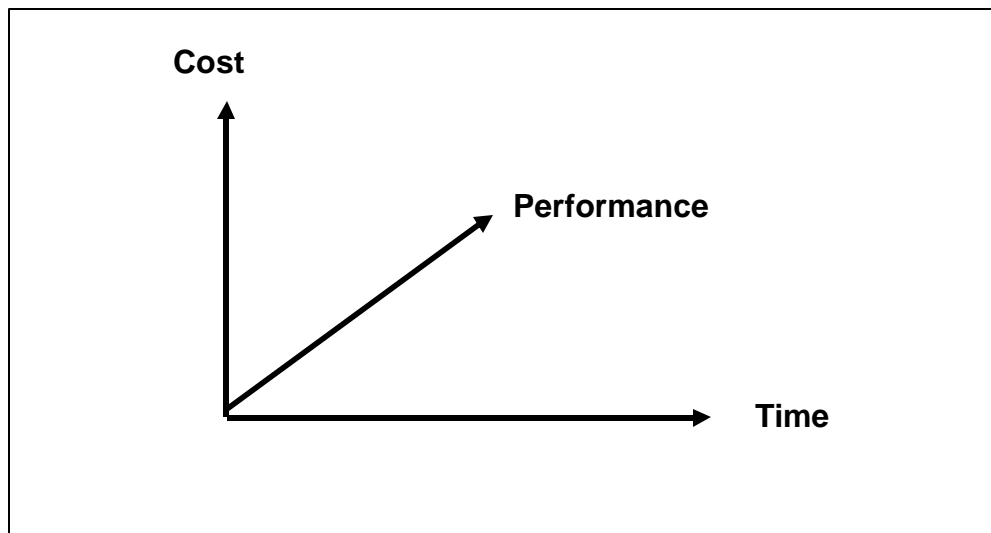
Chapters 2 and 3 of this manual provide an overview of the entire system and detail the theory and departmental philosophy that are critical for the success of this new system. Chapters 4 through 10 provide the details and supporting documents for the individual stages of the process and should be considered as the reference for all those involved in the process.

The appendices also provide critical information that should be referred to throughout the process. Appendix I describes the Project Plan, which is the framework for the entire project and should be referenced during all stages. The estimating process is discussed in detail in Appendix II, and Appendix III presents the objectives and procedure of the Project Finance Committee. Appendix IV provides team building scenarios for the different stages of a project as it progresses through the development process.

## 2 Project Management Principles

Project management is a systematic process of planning, budgeting, scheduling, staffing, directing, and controlling of a set of related and interdependent activities to achieve a desired objective.

Formally, project management is defined as the judicial use of resources to achieve a prescribed objective. The resources referred to here are time and cost, and the prescribed objective is the desired level of performance (owner satisfaction) for the project. The three criteria of time, cost, and performance jointly define the performance indicators of project success. The following figure depicts the space for all possible project outcomes. The optimum result usually falls within the defined limits for time, cost, and performance. This optimum result can be achieved through a series of trade-off analysis where the most favorable combination of time, cost, and performance is settled on.



**Figure 2-1**

**Project management is to make things happen. It is a controlling function and not an administrative one.**

Today, public agencies are under severe public scrutiny to reduce overhead and improve productivity. Industry provides stiff competition and the public is demanding more accountability. As budgets gets tighter, pressure to reduce cost by eliminating functions or streamlining the processes becomes more pronounced. The bottom line for public agencies is to reduce bureaucracy and become more competitive.

**Project management provides the necessary tools for an organization to utilize its human and financial resources more effectively.**

To effectively apply project management concept, one prerequisite is a clear understanding of the process and its constituent component. There are five major components to the project management concept. The following paragraphs present details of these components.

## **2.1    *The Project***

The project consists of a set of related activities that collectively produce an outcome to fulfill a specific objective. A project is an organic entity and has a three-phase life cycle: birth, maturation, and termination. The following diagram represents a project life cycle. At birth, the rate of progress is slow while the project is being organized and initiated. During the maturation period there are flurries of activities and the pace of progress increases and then starts to decrease as the project approaches the termination phase. During the termination phase the rate of progress is the slowest while the project is readied for completion and turn over.

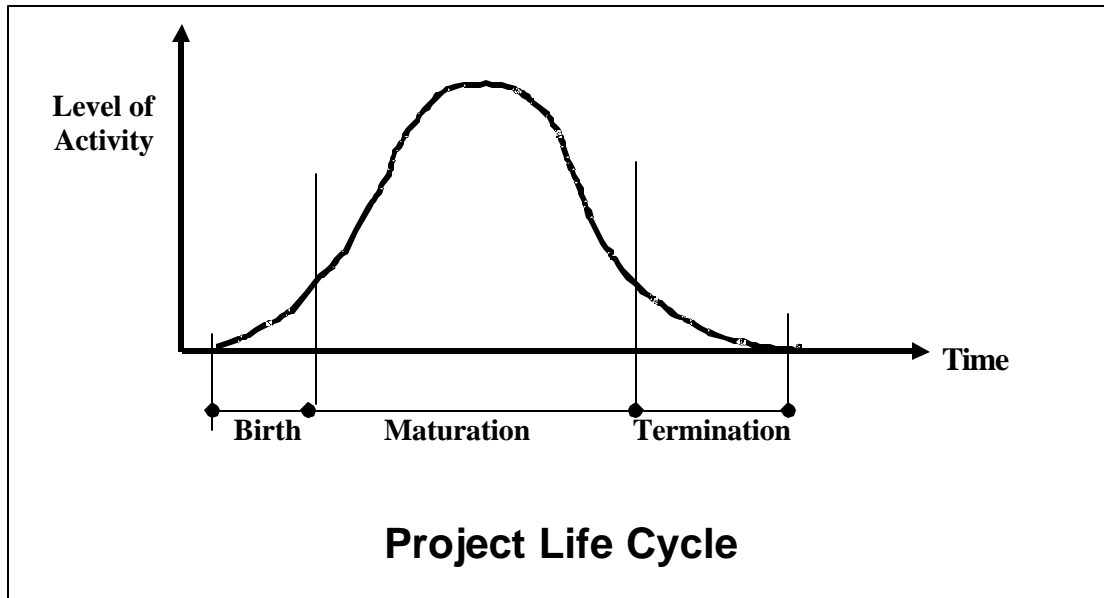


Figure 2-2

All projects share four common characteristics:

- They have goals.
- They involve interrelated activities.
- They have a limited, finite duration, with beginnings and ends.
- They are unique.

## 2.2 *Project Manager (PM)*

A successful project requires effective leadership from a project manager (PM). The PM is responsible for carrying out the project by insuring that all project activities are completed in accordance with time and budget requirements and at the highest level of quality. To do so, the PM must assemble a project team of functional specialists (experts) to accomplish the individual tasks of the project.

The undisputed leader of the project team, the PM has the ultimate responsibility for the success or failure of the project. The PM is the one who can get the job done. For the purpose of business at DOTD, two PMs are often used—one from the Office of Planning and Programming (PMPP) and one from the Project Development Division (PMDD).



The PM is a generalist rather than a specialist. Typically, the PM does not have the time or the skills to personally execute each detail within the project. The PM must depend on the team members having the necessary skills to get the job accomplished. The PM must provide overall direction, guidance, and motivation. The PM is:

- a team builder
- a motivator
- a communicator
- a listener

The PM is also:

- problem-oriented rather than discipline-oriented
- a synthesizer rather than an analyzer
- a facilitator rather than a supervisor

So, where do project managers come from? Obviously, no one is born with project management skills. Project management skills can only be acquired through experience of trying different approaches and then identifying what works and what doesn't. At times, this experimentation can lead to disastrous results in getting projects finished on time and within budget. A lucky project manager attains skills through long-term training while being mentored and guided by an experienced and successful PM. Unfortunately, many project managers start their careers without such valuable guidance.

**A good project manager will do what it takes to complete the assignments and meet the overall project objectives.**

A PM's career path usually starts in one or more functional work areas. As the individual's level of responsibility grows, so will their skills in decision making and working with others. This type of experience may eventually lead to the development of leadership skills. Finally, one will develop expertise in few areas, while possessing only general knowledge in others.

A new PM has a tendency to concentrate efforts on familiar technical tasks. As an inexperienced PM is more knowledgeable in specialized areas, they have the tendency to allow other work to progress at the discretion of the team members. In such cases, the PM will let the project fail by inadequately controlling the overall project operation.

**An experienced project manager concentrates on providing leadership by getting involved with high level issues rather than “getting lost in the weeds.”**

PMs should separate themselves from the day-to-day technical tasks and concentrate on effectively managing and controlling the many varied operations. Once a functional expert is moved from a functional area to project management, they must give up their safety net of controls provided by senior functional engineers. New PMs will learn that, for most part, they are “flying solo.”

The PM’s efforts are generally concentrated on examining various situations and deciding what things should be done to accomplish the desired end, regardless of whether or not they follow the patterns set on previous projects. In doing so, they must remain cognizant that they have responsibilities to the parent organization, the project, and the project team. In meeting these responsibilities, the PM will face the difficult task of dealing with conflicting objectives. A successful PM will create goals that are satisfactory to the parent organization, the project, and the project team.

**The project manager is the coach. He develops a game plan around his team’s talents. The team’s ultimate success depends on the coach’s appreciation of his team’s capabilities.**

A successful PM has self-motivation and skills to confront and challenge adversity. Their knowledge of functional areas will help in scheduling and directing the functional activities of the team members. They must constantly advise and illustrate to the project team how their assigned activities will affect the completion of the project. The PM’s goal is to build a close-knit team working toward a common objective.

To achieve the project objective, the PM must portray an image dedicated to excellence, discipline, optimism, and confidence, never faltering in the leadership role. They should cultivate a team culture founded on knowledge, cooperation, innovation, and understanding of basic human needs with regard to self-actualization and fulfillment. They should demonstrate high performance standards and demand the same from each team member while remaining reasonable, sympathetic, and understanding of failure due to special circumstances.

## 2.3 *Project Team*

The project team is an assembly of specialists (experts) that come together—from within and outside of the organization—for a limited time to work on a specific project. During this period, the team dedicates itself to successful completion of the project under the leadership of the project manager. Each team member is selected because of his/her unique talent and capability necessary in meeting the specific requirements of project objectives. An astute PM attracts only the very best as part of their team.

**Project management requires active participation by members of the project team; it is not a spectator sport.**

In public agencies where the organizational structure is pyramidal with imbedded silos representing functional areas, pulling a prospective team member out of a silo requires negotiation with the manager of the functional area. While the PM does not have direct authority over the prospective team members, they have the right and responsibility to request the allocation of the best available talent to their team. Often, due to competing schedules, the PM may not be able to get a specific individual or group as part of the team. The final decision over what resources are provided rests with the various functional managers from which the team members are assigned. At times when the PM and functional manager disagree, it will be necessary to elevate the issue to higher levels in the organization, with the possibility of the functional manager's decision being over-ruled. In any case, the affected functional manager should provide the best available resources to the project manager. Occasions like this call for special negotiating talents and an astute PM would not create a conflict that will have long term consequences. Once assigned to a team, the individual team member is responsible for completing their assigned task in the timeframe designated by the PM.

**The project manager plans, schedules and directs the project.  
The functional specialist performs the assigned activity.**

An effective PM grasps the role of the team's functional specialists and recognizes them as the technical experts. If the specialists believe that certain technical portions of the PM's requirements are unsound, they have the responsibility, by virtue of their expertise, to present their case to a higher authority.

**Project managers' universal credo: "To get the job done!"**

The most important responsibility of a PM is to generate interest and enthusiasm in the team members for the project goals. The team members must adopt the project goals as their own. In developing detailed plans and schedules for project tasks and activities, the PM and functional specialists assigned to the team work together to develop a plan that is acceptable to all. Ultimately, the PM's plan must become the team's plan.

## **2.4 Project Management Process**

To have a successful project, a capable PM follows a project management process. Such a process must be sufficiently flexible and robust to allow adaptation to various project types. Nevertheless, there are four major functions that are fundamental to such a process. These four functions are:

- Project Planning
- Team Building
- Directing Function
- Control Measures

The degree of effort required for each of the above functions varies with the size and complexity of the project. For example, a simple pavement overlay project may require minimal effort in one or more of these areas, while major projects could require considerable effort. The PM must determine the appropriate amount of effort required in each area to insure the successful completion of the project. The following paragraphs provide further details for the four functions.

### **2.4.1 Project Planning**

Planning a project is the process of deciding, "What must be done?" It entails a series of activities designed to ensure that the project is completed on time, within budget, and with an outcome that meets expectations. Project planning requires complete familiarization with all aspects of the project. It is the first step of the project management process. Regardless of the phase of the project—the project may be in feasibility, planning, funding, design/development, letting, or the construction phase—the result from project planning must ensure that the overall

project objective can be achieved. The outcome of the planning function is a document called the Project Plan. Appendix 1 provides details of a Project Plan.

Project planning includes considering schedules and budgets. Scheduling establishes timelines and milestones for the completion of tasks and activities that makeup the project. The project budget identifies the resources needed, when they are needed, and an understanding of the sources through which the project is to be financed. The following sections detail these two areas.

**Project Schedule:** Project scheduling responds to the question of “When is it going to be done?” It is the process of sequencing project activities in a logical and systematic way, setting target deadlines for each activity. Scheduling also determines milestones. Once a project schedule is established, the challenge is to allocate appropriate resources to each activity and task so that the project is completed according to the schedule. In the scheduling process, some critical activities will control the project completion date. Conversely, some activities will be float activities meaning that if they are delayed within their float period, the project will not be delayed. An experienced PM will constantly watch the critical activities. A critical path method (CPM), described later, is normally used to develop comprehensive schedules of critical and float activities.

**Project Budget:** Project budgeting deals with the question of “How much is it going to cost and what are the sources of funds?” Budgeting applies to the costs associated with each activity or task. As the project progresses, accumulated costs are compared to the established budgets, and in the case of cost over-runs, corrective measures are taken to adhere to budgetary requirements. At times, it may be necessary to update the budget figures, but, ideally, budget figures should never be adjusted. A project will include a variety of costs including material and labor, direct and indirect. Care must be taken to include all costs in the budgeting process.

## **2.4.2 Team Building**

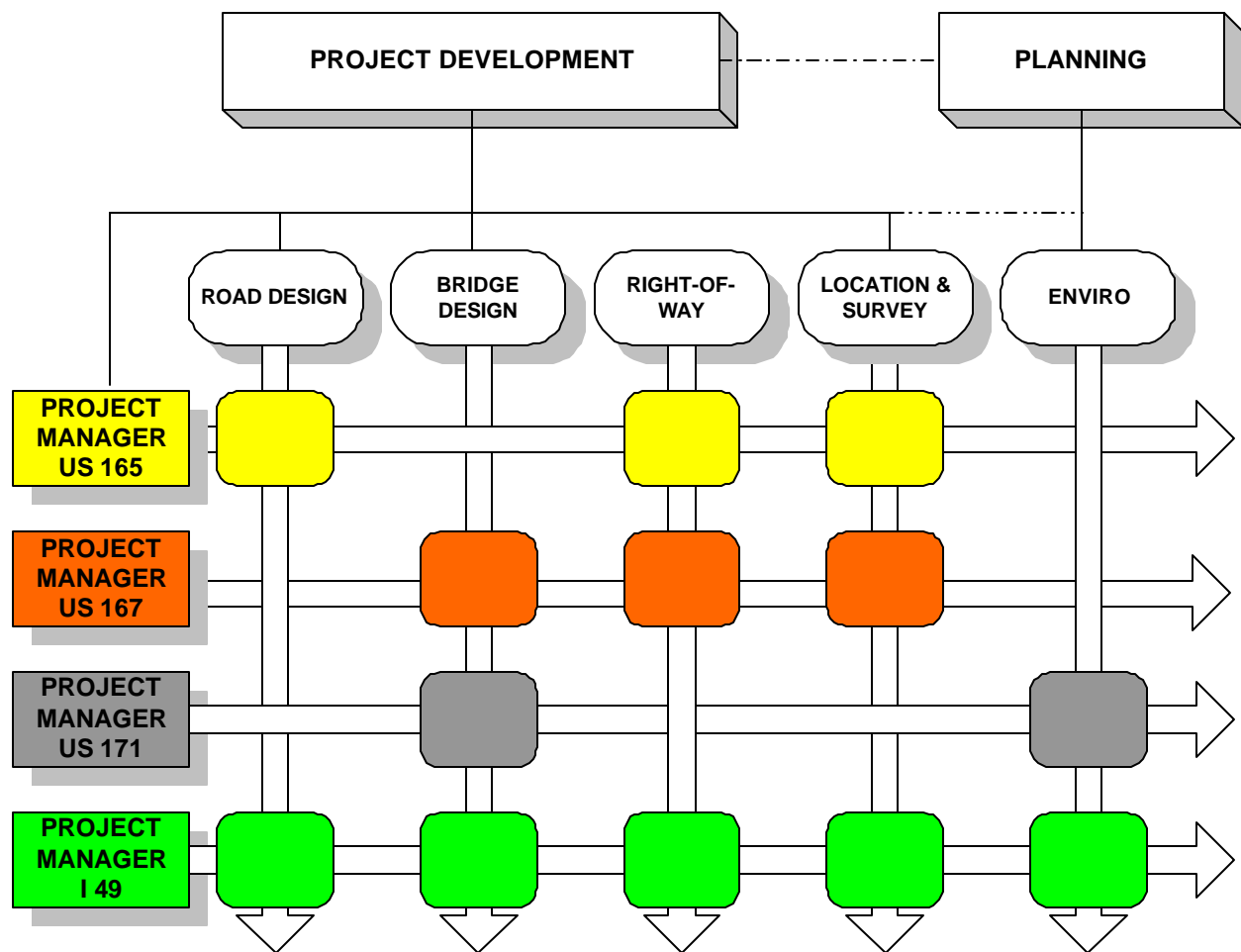
Building the project team (staffing process) basically deals with finding the right person to do a specific task in a competent manner. The staffing function answers the question of “Who is going to do it?” Answers to this question involve determining staff level requirements for each task, the duration of engagement for each team member, and where each team member is going to come from. The team members come from inside the organization or are from an external consulting firm. As a matter of fact, if services of a consulting firm are utilized, the entire staff of that firm can be considered as potential team members.

The team members assigned from within the organization are usually housed in specialized functional areas and tend to work independently within their technical expertise. This is more typical in public organizations than private firms. The functional areas in a public organization are sometimes referred to as “silos” to demonstrate the rigidity of the organizational structure.

Once assigned a project task, a functional specialist is considered as a team member of the project in question. These functional specialists perform similar tasks for many different projects. Once a functional specialist has satisfied the needs of a project assignment, they become available for another assignment.

The project manager and the functional manager establish priorities for the completion of the tasks on each project. In setting these priorities, the functional manager has the difficult task of scheduling functional specialists’ activities to provide the necessary support to a project manager for successful completion of the project.

The following figure depicts the formation of project teams through staffing from various functional areas in a functional organization. The functional areas run vertically and serve as resource. The individual projects run horizontally across the matrix utilizing specific resources from each functional area. The PM is responsible for coordinating and integrating activities across multiple functional lines and as such must be generally familiar with the operations of each functional area.



**Formation of Project Teams in a Functional Environment**

**Figure 2-3**

In public as well as private organizations, which are functionally structured, continuous support and encouragement from upper management will be needed to effectively implement a project management process. There are a number of individuals or groups that influence successful development of a project. They are:

**Upper Management:** usually play a supportive role in providing adequate resources to the functional and project managers. Members of upper management play the role of facilitators and at time become referees. They usually do not have direct involvement in a project unless the project is large or highly visible. On the plus side, the highly visible project will probably receive greater support, which will make it easier for the PM to

attract the best talent and acquire the needed resources. On the negative side, upper management may find it irresistible to meddle in the project, leaving the PM in an awkward position.

**The Project Manager:** is responsible for the timely performance of the assigned project, but does not have direct authority over the functional personnel. The PM accomplishes his mission through effective communication and persuasive skills, especially in dealing with the functional managers.

**Functional Managers:** have responsibility for various divisions and sections in the organization. Each division maintains expertise in one or more functional areas to provide the required services. As the PM organizes a project team, they must negotiate with functional managers for resources. Therefore, it is important that the PM maintains a positive interpersonal relationship with the functional managers. In negotiating for resources, it is possible that a functional manager not commit the availability of certain individuals to a project. If the PM is fully convinced (by the evidence) that the assigned personnel are unacceptable, he should confront the functional manager and elevate the issue to a higher level.

**Functional Specialists:** perform detailed and usually technical tasks in a project. Often they have to cope with strenuous deadlines and simultaneous demands with limited resources. They usually face conflicting priorities on different projects and meet unscheduled changes in the project plan. They may be the “unsung heroes” of the project team.

**Consultants:** are utilized when sufficient resources are unavailable or specialized expertise is needed. As such, the consultant’s staff will work in a team environment with the assigned staff from within the agency. Usually, when a consulting firm is utilized, internal staff appointment is kept to a minimum. However, the PM’s role will be somewhat different. First, the PM’s relationship to the consultant will be formal and constrained as defined by the contract. Therefore, the PM should have substantial knowledge of the provisions in the contract executed with the consultant. It is always advantageous for the PM to have an effective role in negotiating the contract. Second, while the PM does not have direct responsibility for the internal operation of the consultants, they must remain fully informed of the consultants’ activities since their performance will determine the success or failure of the project. In short, the PM must balance two extremes: he/she cannot manage the consultant’s staff, but he/she must



remain fully informed of the project progress and when necessary do all that can be done to ensure project's success.

**Cooperating Governmental Agencies:** are usually state and federal agencies that have regulatory responsibilities over the impacts that a project may have. For most parts, these agencies deal with environmental issues. Because the success of the project depends on the cooperation of these agencies, the project managers must be fully conversant with the regulatory requirements and policies that concern the project. For example, the PM must be knowledgeable of the environmental regulations governing all permits and authorizations.

### 2.4.3 Directing the Project

Directing is the process of guiding each activity to its timely completion within its assigned budget. Directing responds to the question of "How is it being done?" Directing requires that the staff members be familiar with the project and their individual responsibilities, be knowledgeable about the technical issues, and dedicate themselves to successfully complete the project. To develop an effective directing function, the PM should:

- Direct all activities related to project management function - plan to meet all contractual obligations.
- Develop a strategy for team operation – establish written guidelines and clearly define responsibilities and restraints.
- Develop and implement decision process within the project team – ensure that decision authorities are well understood by the team members.
- Establish performance goals for the project and members of the project team.
- Promote the growth and professional development of the project team members.
- Foster and develop a spirit of project team effort.
- Take an active role in conflict resolution between departments or groups.
- Maintain current knowledge of overall project status.
- Maintain effective communications with all partners, team members, participating governmental agencies, and others performing project work.
- Monitor project activities for compliance with the agency's general policies, mission and philosophy.
- Interpret, communicate, and require compliance with project procedures, contracts, the approved plan, and directives.
- Maintain personal control of adherence to contract requirements.

- Ensure adherence to time and cost schedules – take necessary steps to meet milestone targets.
- Closely monitor project activities for conformity to project scope provisions.

#### **2.4.4 Control Measures**

The control process consists of three distinct but related activities:

1. Monitoring the actual progress of the project; i.e., measuring the performance,
2. Evaluating the progress to ensure that the project objectives are being met; i.e., project is on time, within budget, and at the desired level of quality, and
3. Taking corrective actions to put the project back on track when there is deviation from the schedules and budget.

The control process ensures that the project “is being done” in accordance with the approved objectives (schedule, budget, and quality). The PM dynamically controls the project by establishing goals and schedules. They oversee the project to a successful completion through constant monitoring and providing direction. The PM looks at what has been accomplished on the project and compares progress with the original schedule, goals, and objectives. They then take necessary steps to overcome major variances between progress and the original requirements.

### **2.5 Project Management Tools**

As previously described, two important issues in project management are scheduling and controlling. Through scheduling, time and resources are allocated to various activities that make up a project. The control function ensures that the project remains on track until completion without exceeding the allotted time or the budget. At times, there will be variances from the “game plan” for the project. As long as the future holds some uncertainty, project plans will be inexact. In controlling a project, the question is not whether there are variances, but whether the variances are small enough to be acceptable. When the variance is not acceptable, corrective measures must be taken to overcome it. In such a case, the project manager must quickly consider and analyze all related information and situations and implement corrective actions to place the project back on track.

Application of the project management process requires utilizing appropriate management tools. As everything will not go according to plans, midcourse adjustments will be necessary

periodically. In deciding what course of action is most appropriate, the PM must perform a series of analyses to arrive at the best decision. The tools necessary to aid a PM in perform such analyses fall into three categories:

- Scheduling tools
- Financial tracking tools
- Management reporting tools

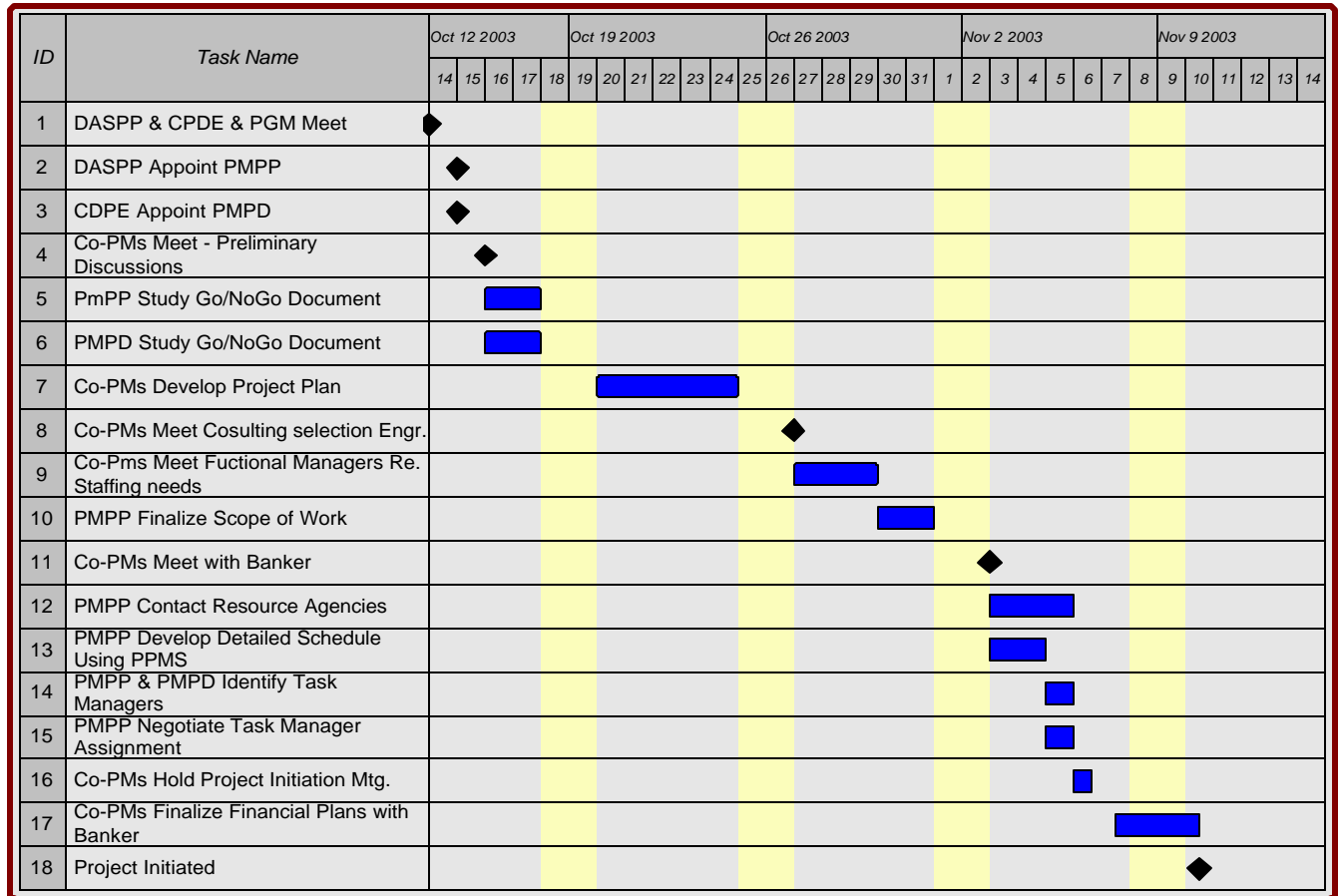
Scheduling tools are used to establish and track timelines for tasks or activities that make up a project. A scheduling system provides for timely information on the progress of a project and allows the PM and the project team to make the necessary adjustments so that the project can meet its established timeline. The following sections outline various scheduling tools. Today, there are many sophisticated scheduling systems available in the market.

Financial tracking tools are for keeping track of project expenditures and for comparing the actual amounts to the budgeted amounts. Completing a project within its allotted budget is as important as finishing the project on time. Today's project scheduling tools are also capable of financial tracking and providing detailed financial reports.

Management reporting tools produce the time schedule and financial reports for the project. There are several levels of reports, from a very detailed task level report to a highly summarized high level management reports. Normally, the level and types of reports are influenced based on the complexity and size of the project. A robust project scheduling and management system will have the necessary capabilities to produce a variety of reports.

### **2.5.1 Gant Charts**

A Gant Chart is a simplified means to represent project activities, their dependencies and each activity timeline in a graphical form. The chart consists of a time scale and wide bars representing activities and tasks. Each bar depicts when the task is to start, how long in going to accomplish the task and when the task will be completed. Gant Charts are considered an elementary project scheduling tools and are usually used for presentation purposes only.



**Project Gant Chart**

**Figure 2-4**

## 2.5.2 CPM and PERT

The two most widely accepted methodologies for project scheduling and control are Critical Path Method (CPM) and Program Evaluation and Review Technique (PERT). CPM was developed in 1956 by E. I. du Pont de Nemours' Construction Division in collaboration with Sperry-Rand Corporation. Since its inception, CPM caught the eye of the construction industry and is now in wide and general use for management and control of projects.

The Program Evaluation and Review Technique (PERT) was developed in 1958 by Booz-Allen and Hamilton, a systems consulting firm, for the U.S. Navy. The success of the Polaris Missile development program, completed two years ahead of schedule, is largely attributed to PERT's usefulness and effectiveness.

Today, the terms CPM and PERT are used synonymously to represent the CPM method. CPM is a powerful scheduling and management technique for all types of projects. It is deterministic; that is, project duration is determined based on information that is specified with certainty. CPM operates based on the principle of “management by exception.” It focuses attention on the activities that directly affect the overall duration of the project. By concentrating only on the critical activities—in contrast to all activities—ample opportunity is provided for the management to devote more time to project control and thus increase chances for project success.

Both CPM and PERT require that a project network be constructed first. This network is a schematic representation the project activities and their interrelationships to each other. In other words, the project network is a topological representation of the project and establishes the sequence of events. A properly developed project network is used as the tool for defining all dependencies among various entities. It not only depicts the sequence of events and activities, it also provides for the timelines that these activities and events are to be performed.

Next, the network is used to determine starting and completion time of each activity. The process identifies all critical activities and events that control the project completion date. The final use of the network is to establish how and when the available resources are to be allocated to various project entities. During the project execution phase, the network becomes the instrument for control. It permits the periodic review of activities as affected by the uncertainties of the planning phase and allows for reevaluating the incomplete tasks and initiating remedial measures.

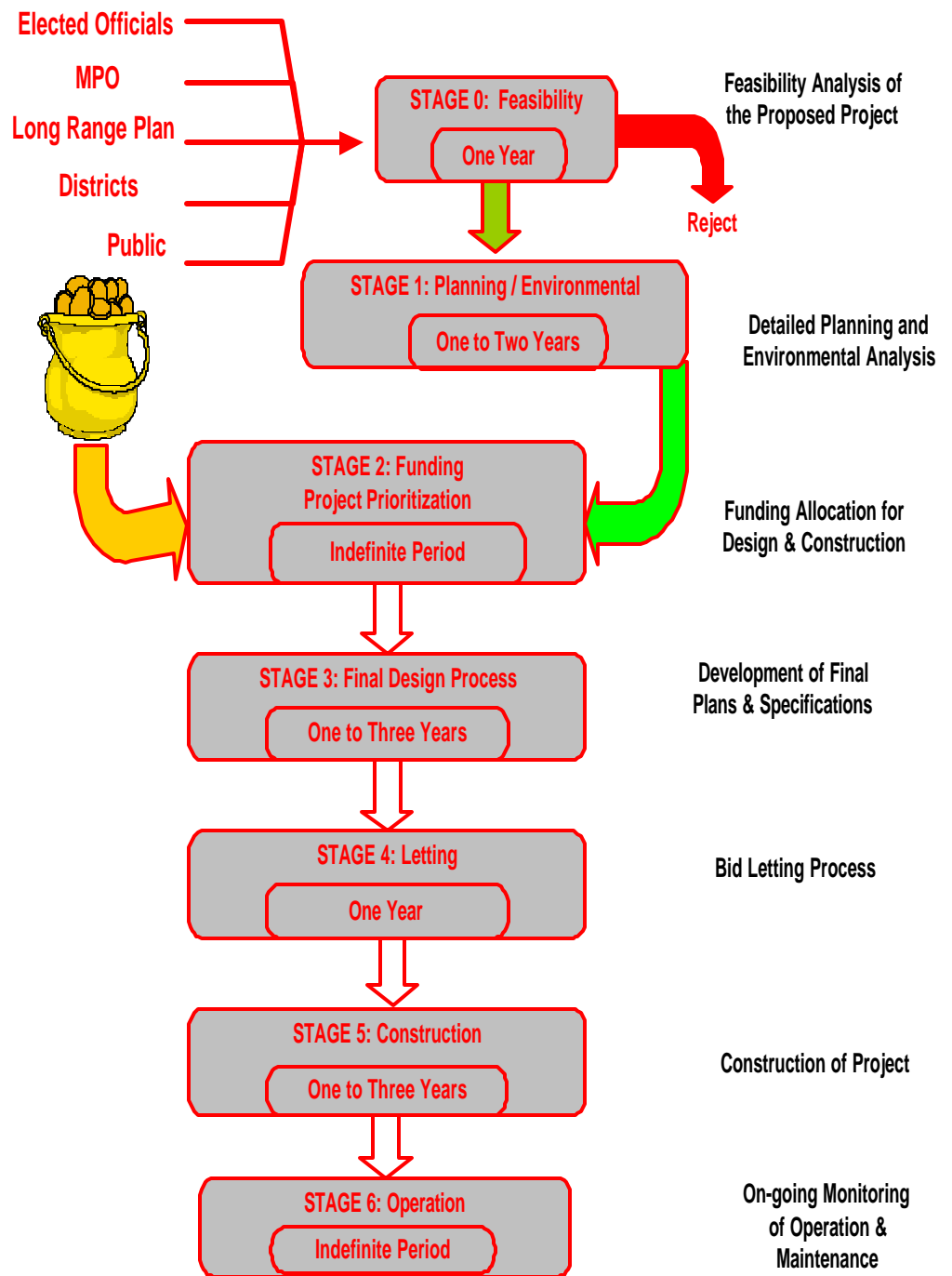
### **3 DOTD's New Project Delivery Process**

People of Louisiana demand an accountable, speedy, and unobtrusive process to develop the state's transportation projects. In response to this public demand, DOTD has developed and is now implementing a new and streamlined project development and delivery process. This new process relies heavily on the principles of project management and profoundly alters the traditional DOTD business practices. The key element of the new process is its clear definition of stages in the project development process while placing responsibility for specific outcomes from each stage. The new process also demands accountability.

The central figure in this new process is the project manager (PM). In some cases, however, two project managers will be necessary. The PM will be responsible for organizing a team and carrying out the project development from planning to construction. Placement of such a responsibility on an individual is an alien notion in today's DOTD culture. Therefore, the success of this new process will require a total commitment on the part of upper management of the department. This commitment must include making allowances for team building process that at times will be contrary to the established organizational structure of the department and may possibly conflict with some of Civil Service rules (See Appendix IV for examples). Nevertheless, if we are committed to changing our ways of doing business, we must overcome these obstacles.

Figure 3-1 on the next page defines the seven stages of the project development process. The process starts by doing a feasibility study for a proposed project and ends by putting a completed project into operation and monitoring its performance to determine if the project's goal is achieved.

The following sections discuss activities to be performed in each stage and outline the team building procedures. Chapters 4 through 10 provide the standard operational procedures for each stage.



### DOTD's New Project Development Process

Figure 3-1

## ***Stage 0: Feasibility***

Stage 0 determines the feasibility of a project. Once a project is proposed to be undertaken by DOTD, a feasibility analysis must be performed to determine if the project merits further consideration. A timely undertaking of Stage 0 is important, as the proposer of the project needs to be informed of the department's decision. If the project is not to receive further consideration, good customer service policy dictates that the proposer should be informed of the decision as soon as possible, thus preventing the impression that the project will be implemented.

The outcome of Stage 0 is a "go/no-go" decision regarding project feasibility. A "go" project is deemed to be feasible and will continue further through the project development process. The "no-go" project is infeasible and will be dropped from further consideration. The basis for a "go/no-go" decision is founded on a series of analyses that include:

- 1. Preliminary Purpose and Need:** A preliminary description of the transportation problem or other needs that the proposed project is intended to address. Clearly addresses the question of who the project is serving.
- 2. Preliminary Alternatives and Initial Feasibility Analysis:** Develop conceptual alternatives considered technically feasible, including potential impacts analysis and discussion of project challenges.
- 3. Preliminary Environmental Review:** Identification of all potential environmental "show stopping" constraints or issues that influenced early determinations of project feasibility, timing, and cost. Identification of major community issues impacted by the project during construction and operational phases of the project. Also serves as a preliminary analysis of the impact of the project on the state or region's economy.
- 4. Design Criteria and Initial Context Determination:** Identify preliminary basic design criteria, which may include functional roadway classification, design speeds, horizontal and vertical constraints, and any required waterway, levee, or railroad clearances.
- 5. Agency and Public Involvement Plan:** Indication of jurisdictional review agencies and interested public or private parties that expressed interest in the project, and other information relevant to the development of a public involvement plan in Stage 1.
- 6. Preliminary Project Estimate and Budget:** Development of estimated costs for Stage 1 National Environmental Policy Act (NEPA) and environmental Studies, as well as



preliminary design, right-of-way acquisition, utility relocations, construction and environmental mitigation costs, in current year dollars.

It is anticipated that Stage 0 activities will not require assembly of a project team. Rather, the above outlined activities will be performed by the proposer or various sections within DOTD, depending on the nature of the project. Overall, the Office of Planning and Programming has the ultimate responsibility for Stage 0 implementation.

See Chapter 4 for details of the Stage 0 Standard Operating Procedure.

## ***Stage 1: Planning and Environmental Process***

Stage 1 takes a project through the planning and environmental assessment process. The outcome from Stage 1 will identify a preferred alignment for the project with a clear description of scope, budget, and major design features. From the environmental stand point, Federal-aid projects will be classified as an Environmental Assessment (EA) resulting in a Finding of No Significant Impact (FONSI), Environmental Impact Statement (EIS) resulting in a Record of Decision (ROD), or Categorical Exclusion (CE). For state-funded projects, the projects will be processed as an Environmental Exclusion (EE), Environmental Finding (EF), or Environmental Record (ER).

Stage 1 will culminate in an environmental closure (CE, FONSI, ROD, EE, EF, or ER) and a document named "Scope and Budget Memorandum." The Scope and Budget Memorandum that is signed by both the Assistant Secretary of the Office of Planning and Programming and the Chief Engineer of the Office of Highways will include the following items:

- Description of the Project and Selected Alternative
  - Location, Preferred Alignment, and Major Design Features
  - Context-Sensitive Issues and Design Exceptions
  - Maps and Exhibits, as necessary
- Funding for full project implementation
  - Estimates
    - Construction
    - Engineering
    - Real Estate Acquisition
    - Utility Relocation
    - Environmental Mitigation/Commitments

- Traffic Management
  - Possible funding categories/mechanisms
- List of Commitments, Agreements and Permits
  - Commitments which need to be incorporated into the Plans, Specifications and Estimate (Stages 3 and 4)
  - Agency Agreements
    - Memoranda of Understanding
    - Memoranda of Agreement
  - Permits
    - Coast Guard (Section 9, General Bridge Act of 1946)
    - Corps of Engineers (Section 404, Section 10)
    - LA DEQ (Water Quality Certification and NPDES)
    - LA DNR (Coastal Use)
    - LA WL&F (LA Scenic Streams)
- Signatures
  - Recommendations
    - Project manager, Planning/Environmental (PMPP)
    - Project manager, Design/Project Development (PMDD)
  - Approval
    - Assistant Secretary, Office of Planning and Programming
    - Chief Engineer, Office of Highways

The decisions and project parameters documented in the Scope and Budget Memorandum cannot be changed in subsequent stages without the approval of the Chief Engineer of the Office of Highways and the Assistant Secretary of the Office of Planning and Programming.

See Chapter 5 for details of the Stage 1 Standard Operating Procedure.

### **3.3 Stage 2: Funding**

Stage 2 deals with the programming of a project to proceed into Stage 3. A project reaching Stage 2 must have completed all Stage 1 requirements. The programming function is accomplished when a source of revenue is identified to provide for all associated Stage 3 and Stage 5 activities costs.

A project entering Stage 2 must have had a PM assigned to it in Stage 1. The assigned PM will be responsible to guide the project through Stage 2 and ensure that it is prepared for Stage 3.

If a project remains in Stage 2 for a long period of time (i.e., over three years with no action), National Environmental Policy Act (NEPA) documents may require reevaluation according to FHWA regulation 23 CFR 771.

There are three basic activities that must be conducted in Stage 2. They are:

- 1. Update of Cost Estimate Developed in Stage 1:** It is conceivable that a considerable period of time may have elapsed between the time that a project completed Stage 1 and entered Stage 2. At such times, it is prudent to perform and update of all cost estimates. The components of such a cost estimate must include design, R/W, utilities, construction costs, and environmental mitigation.
- 2. Allocation of Funds:** DOTD projects are funded through a variety of sources such as federal funds, state funds, local funds, bond funds, etc. An important Stage 2 function is to allocate appropriate amount of resources for completion of the project. This function will entail identifying means of finance, the amount of available funds, and the timing for the availability of funds. Obviously, these funding factors will have a direct affect of delivery schedule of the project.
- 3. Establishing Project Delivery Date (PDD):** PDD is defined as the project design and development completion date. It is the date the project leaves Stage 3 and enters Stage 4.

In establishing a PDD, the project manager needs to have developed a feasible project schedule, have all task managers assigned, and have all funding allocation issues resolved. In other words, the PM must jointly work with the Project Finance Committee (PFC)—referred to as the “banker”—and the Functional Managers for the assignment of Task Managers. The PM must establish a Stage 3 project schedule that can be met by all concerned.

The establishment of PDD is a highly critical task. All Stage 4 activities will be based on the announced PDD. Earning public trust will directly depend on our success rate in meeting the established PDDs.

See Chapter 6 for details of the Stage 2 Standard Operating Procedure.

### **3.4 Stage 3: Final Design Process**

Stage 3 is the design and development stage. By the time a project reaches this stage, the project must already have an assigned PMDD and a project team. In cases where a project manager from the Office of Planning and Programming (PMPP) and a project manager from the Project Development Division (PMDD) are involved, the lead role will be vested in PMDD.

The prior established PDD will be the deadline for all Stage 3 deliverables. This deadline must be strictly adhered to. The deliverables from Stage 3 are:

1. Final plans
2. Specifications
3. All permits including rail road
4. All right-of-way acquired
5. Utility relocation agreements
6. Final cost estimates
7. Traffic management plan

See Chapter 7 for details of the Stage 3 Standard Operating Procedure.

### **3.5 Stage 4: Letting**

Once a project is delivered to Stage 4, the project will be readied to be let for construction. DOTD's Project Control unit is responsible for Stage 4 implementation and will work with the PMDD to successfully let the project.

Stage 4 activities include:

1. Development of the final financial plan
2. Preparation of letting documents
3. Establishing construction period
4. Implementation plan for traffic management during the construction period
5. Establishing a letting date with due consideration for:
  - Geographic distribution of construction projects
  - Providing for adequate competition among contractors

- Maintaining level monthly letting amount
  - Other factors
6. Preparation and signing of the construction contract

See Chapter 8 for details of the Stage 4 Standard Operating Procedure.

### **3.6 Stage 5: Construction**

This stage involves the construction process. Once a contractor is selected, DOTD's Construction Division, the district's Construction Engineer, the district's Project Engineer, and the PMDD will meet with the contractor to plan the job. It is expected that these entities will cooperate to identify all special project related issues and will resolve possible difficulties.

During the construction period, the district Project Engineer will take over the project management responsibility. However, the Project Engineer must keep the PMDD abreast of any special issues that may arise during the construction period. Any design-related plan changes must be communicated to the PMDD for information and input. The PMDD will accept responsibility for all design-related plan changes and should ensure consistency with the decisions and project parameters documented in the Scope and Budget Memorandum.

The basic activities in this stage are:

1. Establishment of construction process, milestone events, work schedules and timelines.
2. Plan for environmental mitigation, if any.
3. Development of a public information plan.
4. Development of traffic control measures during the construction period.

See Chapter 9 for details of the Stage 5 Standard Operating Procedure.

### **3.7 Stage 6: Operation**

This stage deals with continuous monitoring of the project once it is placed in operation. Through a properly designed data collection and evaluation system, the utility of the existing project can be measured. This data will provide input for making modifications to design procedures to further improve the operation of future projects.

See Chapter 10 for details of the Stage 6 Standard Operating Procedure.

## **4 Stage 0 Standard Operating Procedure**

### **4.1 Purpose**

The purpose of Stage 0 (Feasibility) is to reach a decision regarding the project's feasibility and whether the project should continue further through the project development process. A base of information must be developed so that rational decisions can be made regarding the allocation of available funds among competing projects. For those projects that are selected for addition to the Highway Program, Stage 0 must also develop the information necessary to proceed with Stage 1 (Planning and Environmental Process). While Stage 0 activities will be conducted in various sections throughout DOTD depending on the nature of the project, the Office of Planning and Programming is ultimately responsible for Stage 0 implementation.

### **4.2 Process**

DOTD uses two methods to identify candidate highway projects. The first is a technical method that gathers and analyzes data regarding the physical condition, operational characteristics, safety performance, and congestion on state highways. The second method seeks input from DOTD customers—the general public, state and local elected officials, metropolitan planning organizations (MPOs), etc. In some cases, funds are earmarked for specific projects by Congress or the Louisiana legislature. In other cases, DOTD administers federal highway funds for local governments and other special programs.

Due to the number of candidate projects, the Stage 0 process has been streamlined. The complexity of the project will determine the extent of documentation required. For example, those projects requiring right-of-way or having obvious major environmental impacts will require more information than comparatively simple routine projects. For some types of projects, an initial screening may be necessary before proceeding with Stage 0 in order to reduce the number of candidate projects to a manageable level for the resources available. The overall flow of project requests through Stage 0 and their ultimate disposition is illustrated in figure 4-1 (see page 4-8).

#### **4.2.1 Project Types**

**Typical Projects:** Typical projects must be separated by the magnitude of their costs. Those classified as “mega” projects will require dedicated funding since they cannot reasonably be

entirely funded under the annual Highway Priority Program. At the conclusion of the Stage 0 study for each “mega” project, the DOTD Executive Committee will decide whether to proceed with Stage 1 or place the project on hold until more information is available about potential funding sources. To aid in this decision, the Project Finance Committee will make a recommendation to the Executive Committee regarding funding availability.

Regular projects are those that can reasonably be funded under the annual Highway Priority Program, subject to competition with other projects within the same category. Each year, all candidate projects for which Stage 0 studies have been completed will be submitted to the appropriate project selection teams. The teams will then decide which projects proceed to Stage 1 within the respective budget constraints for each project category. Projects not selected can be shelved or retained for reconsideration the following year. For further information on the project selection teams and the project selection procedures, refer to the “DOTD Highway Project Selection Process.”

In instances when resource constraints necessitate an initial screening of typical projects, the DOTD Executive Committee will decide which “mega” projects proceed through Stage 0. For regular projects, the DOTD districts and MPOs will often provide the initial screening; however, in some cases, the appropriate project selection team will perform this task.

To provide adequate time for legislative approval of the Highway Program and for project development, the project selection process must occur several years in advance of construction. The project selection teams are therefore making decisions as to which projects will be let to construction in a given future year. This future year for construction letting in effect establishes a preliminary project delivery schedule. Working backwards from the proposed construction letting year, a preliminary project delivery date (PDD) can be established as well as preliminary completion dates for Stages 1 and 2.

**Federal/ State Earmark Projects:** The U.S. Congress sometimes designates funding for specific transportation projects in various legislative acts in a practice referred to as “earmarking.” The projects are often called “high priority” or “demonstration” projects. Similarly, the Louisiana legislature earmarks funding for specific projects through the State Capital Outlay Bond Program. Stage 0 studies will be undertaken for each of these Federal and State earmarked projects. If sufficient earmarked funds remain following the completion of the Stage 0 study, the project will proceed to Stage 1. If the remaining funding is not sufficient to complete Stage 1, the Stage 0 study will be forwarded to the appropriate project selection team for consideration subject to competition with other projects within the same category (i.e., preservation, operations, safety, additional capacity).

**Special Category Projects:** The DOTD administers federal highway funds for local governments and manages other special programs.

- For Urban Systems and CMAQ funded projects, the decisions regarding which projects will proceed to Stage 1 will be made within the MPO planning process. Normally, the MPO staff will complete the Stage 0 studies and submit them to DOTD for review. Similarly, local governments make the decisions for off-system bridge projects. Completed Stage 0 studies are then submitted to the DOTD for review.
- For highway/railroad at-grade crossing improvement projects and contract maintenance projects, preparation of the Stage 0 studies and selection of projects to proceed to Stage 1 occurs almost simultaneously. This is a result of the repetitive nature of these projects and the extremely low frequency of adverse impacts to the natural or human environments.
- Enhancement projects are a unique case. A wide range of entities submit applications. The completed applications serve as the Stage 0 studies. The DOTD districts review these applications and prioritize them within each respective district. They also coordinate with the MPO for those proposed projects located within the metropolitan planning area in each district.

Regardless of the type of project, once the decision is made to proceed to Stage 1, the appropriate program manager is notified and provided with a copy of the Stage 0 study. Prior to proceeding in the project development process, the Project Finance Committee must certify that funding is available for Stage 1. It is the program manager's responsibility to gain approval of Stage 1 funding from the Project Finance Committee, obtain a project number, and make the necessary contacts to initiate Stage 1.

#### **4.2.2 Process Steps for All Project Types**

The steps for completing a Stage 0 study are outlined in figure 4-2 (see page 4-9). The first step in the process is defining and articulating the purpose and need for the project.

The results of the subsequent steps determine the “practical feasibility” of the projects and provide much of the information needed to make rational decisions regarding the allocation of available funds among competing projects. “Practical feasibility” refers to the technical, environmental, and financial aspects of the project. Can the project be implemented from a technical standpoint? Are there obvious environmental impacts that would preclude



implementation? Is the project cost within the realm of possibility for current DOTD funding programs, or will special dedicated funding be required?

The next step in the Stage 0 process is to identify and describe a project that will address the purpose and need. This includes describing the existing facility; providing technical data such as current ADT, physical condition, etc.; describing the proposed improvements; and providing any technical analyses (i.e., safety, capacity, air quality, point-of-access, etc.). The project description should include the basic design criteria and major design features. Any design exceptions for the project should be presented along with the rationale for them. For major projects or those requiring right-of-way, an aerial photograph with the proposed improvements and approximate required right-of-way limits superimposed should be included as part of the Stage 0 study. For major projects, any reasonable alternatives to the initial project concept should be identified and described. Lastly, the management of traffic and maintenance of access to adjacent properties during construction should be described.

The third step in the process is a preliminary review of the project with regard to the natural and human environment. This begins with defining the context of the area (adjacent land uses, community features, etc.) and then performing an initial check for potential impacts to the environment. This can generally be accomplished by conducting a windshield survey and researching a few websites. If the project proceeds to Stage 1, a detailed environmental review will be conducted. Thus, the purpose of the preliminary environmental review in Stage 0 is to identify potential impacts that could affect the cost or feasibility of the project.

The fourth step in the process is to develop the preliminary cost estimate for the project. The project costs should include estimates for right-of-way, utility relocations, construction (including traffic management during construction), environmental mitigation, and design engineering. Guidance on preparing costs estimates for each stage in the project development process, including Stage 0, has been prepared by the Project Development Division (see Appendix II: Estimating Process).

Finally, the last step in the Stage 0 process is to identify expected funding sources. If the project is being submitted for consideration under the DOTD's regular construction program, then "Highway Priority Program" is all that should be listed. However, if other funding is available to cover a portion of the cost, the source(s) and amount(s) should be listed as this can affect the priority the project is given by the project selection teams. If the project has its own funding (i.e., Federal/State earmark, Urban Systems, CMAQ, etc.), then the source(s) and amount(s) should be listed.

### 4.3 Responsibility Matrix

For each category and subcategory of project, the responsibility for completing the Stage 0 study is outlined in the matrix on the following page. In addition, the responsibility for checking the Stage 0 study for completeness and giving final approval is also indicated.

**Stage 0 Responsibility Matrix**

<b>Project Category/Subcategory</b>	<b>Prepare Stage 0 Study</b>	<b>Check Completeness / Approve Stage 0 Study</b>
<b>System Preservation</b>		
Non-Interstate Pavement	Districts	Transportation Planning Section
Interstate Pavement	Districts / Road Design Section	Transportation Planning Section
Bridge (on-system)	Districts / Bridge Design Section	Bridge Design Section
Bridge (off-system)	Local Governments	Road Design Section
<b>Operations/Motorist Services</b>		
ITS	MPOs / ITS Section	ITS Section
MAP	N/A	N/A
Traffic Control Devices Replacement/Upgrade	Districts / Traffic Engineering Management Section	Traffic Engineering Management Section
TSM	Districts	Districts
Roadway Flooding	Districts	Transportation Planning Section
Weigh Stations	Maintenance Division	Maintenance Division
Rest Areas	Maintenance Division	Maintenance Division
Movable Bridge P. M.	Maintenance Division	Maintenance Division
Contract Maintenance	Districts	Maintenance Division
<b>Traffic Safety</b>		
Highways	Districts / Road Design Section / Highway Safety Section / Transportation Planning Section	Highway Safety Section
RR Crossing Upgrades	Maintenance Division	Maintenance Division
<b>Additional Capacity/ New Infrastructure</b>		
Regular Program	Districts / Road Design Section / Transportation Planning Section	Transportation Planning Section
Corridor Upgrade	Districts / Road Design Section / Transportation Planning Section	Transportation Planning Section
TIMED	N/A	N/A
<b>Other</b>		
Enhancements	Project Applicant	Road Design Section
Urban Systems / CMAQ	MPO	Transportation Planning Section
Federal / State Earmarks (i.e., Demo, Bond)	MPO / Transportation Planning Section	Transportation Planning Section

**Note: The Project Scoping Unit in the Transportation Planning Section is available to provide advice and assistance in preparing Stage 0 studies.**

## **4.4 Checklists**

To aid in the preparation of Stage 0 studies, a checklist has been developed in accordance with the process outlined in figure 4-2 (see page 4-10 for checklist). For minor or routine projects, the completed checklist can serve as the Stage 0 study document. For more complex projects, the checklist serves as an outline in preparing the Stage 0 study.

The Stage 0 Environmental Checklist (see page 4-11), which follows the Stage 0 Study Checklist, was prepared to aid in the preliminary review of potential impacts to the natural and human environment. It begins with a series of items to help define the context of the area followed by more detailed items to aid in the identification of potential impacts. A list of websites containing various environmental databases is included along with a general explanation of the relevance of each item in the checklist.

## **4.5 Project Finance Committee (PFC) Duties in Stage 0**

- The PFC will receive and review the financial implications report (a component part of the Stage 0 deliverables) which includes cost estimate #1. Cost estimate #1 will include an estimate of costs associated with planning, design, right-of-way, construction, mitigation, enhancements, and contingencies.
- The PFC will make a recommendation the Stage 0 committee regarding financial feasibility. A “go/no-go” decision must have the concurrence of the PFC (signature of the Undersecretary/Chairman of the PFC).
- The PFC will make its recommendation based on projections of future revenues, budget partition allocations, appropriateness of innovative financing options, current level of debt/risk factors, and other potential sources of revenue (local or private), etc.

## **4.6 Deliverables**

- Formal notification of project sponsor of the decision regarding the proposed project. In cases of rejection, the notification should include the reasons for the decision.

- For a given project, the deliverable from Stage 0 is a completed study containing sufficient information so that rational decisions can be made regarding the allocation of available funds among competing projects. The following information should be included:
  - Preliminary purpose and need
  - Initial project concept
  - Potential environmental impacts
  - Preliminary scope and cost estimate
  - Expected funding sources
- For those projects that are selected for addition to the Highway Program, the completed Stage 0 study must also contain sufficient information to proceed to Stage 1.

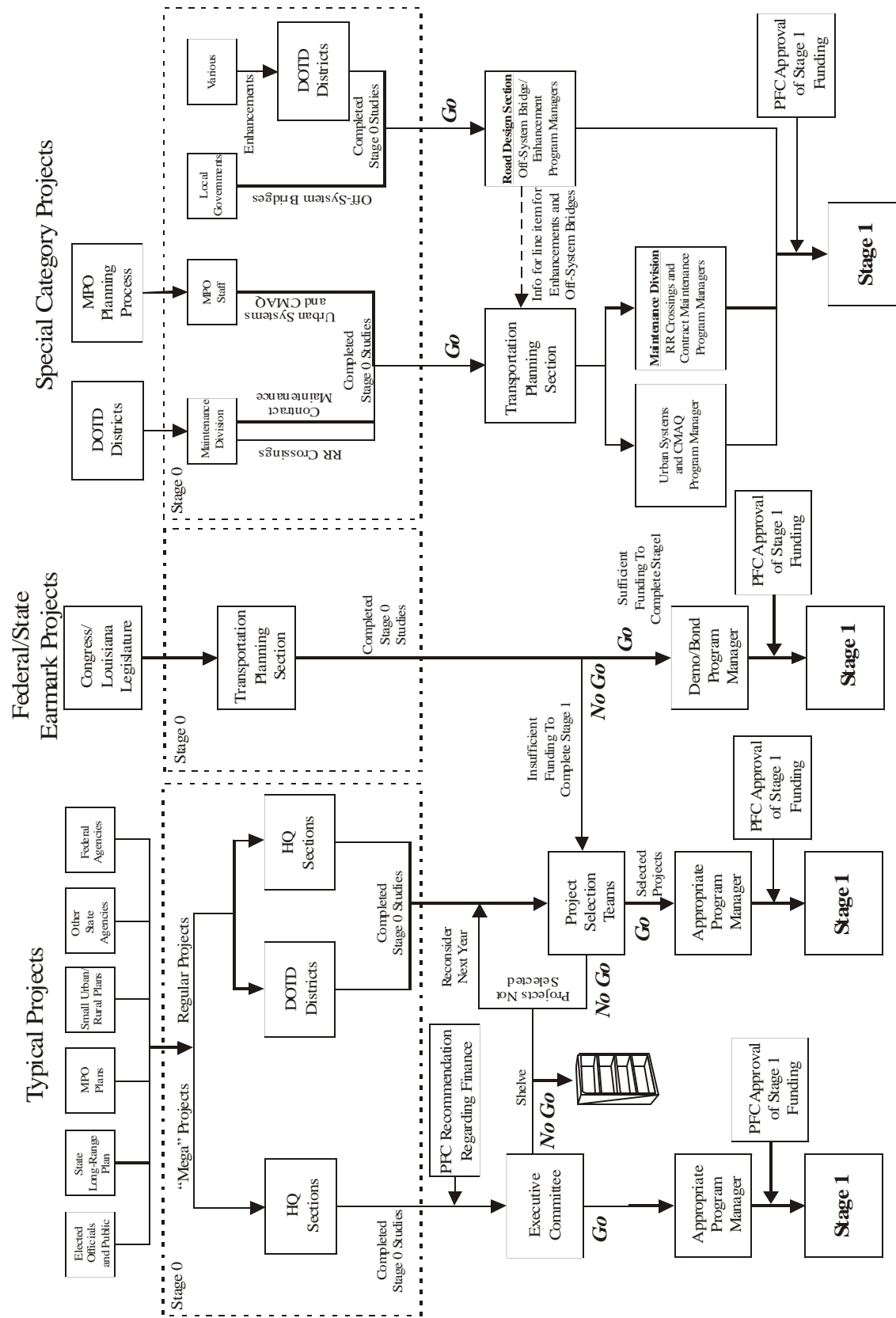
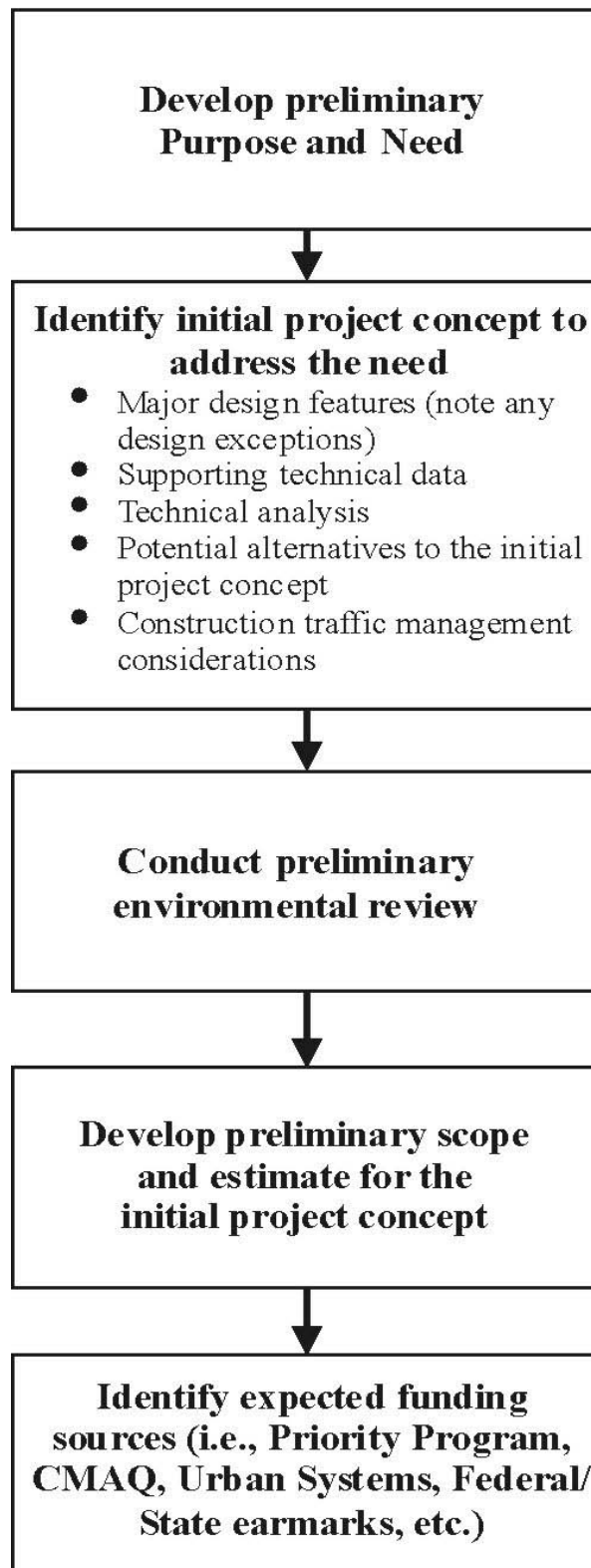


Figure 4-1

## Stage 0 Process



**Figure 4-2**

**CHECKLIST FOR STAGE 0**  
**Preliminary Scope and Budget Worksheet**

District \_\_\_\_\_ Parish \_\_\_\_\_ Route \_\_\_\_\_

Control Section \_\_\_\_\_ Total Project Length (miles) \_\_\_\_\_

Begin Project (CS Log Mile) \_\_\_\_\_ End Project (CS Log Mile) \_\_\_\_\_

Project Category (Safety, Capacity, etc.) \_\_\_\_\_ Date Prepared: \_\_\_\_\_

A. Purpose and need for the project: \_\_\_\_\_

**B. Project Concept**

- Description of existing facility (functional class, ADT, number of lanes, etc): \_\_\_\_\_
- Major Design Features/Criteria of the proposed facility (attach aerial photo w/concept if applicable): \_\_\_\_\_
- Design Exceptions: \_\_\_\_\_
- Technical Analyses: \_\_\_\_\_
- Alternatives to Project Concept: \_\_\_\_\_
- Construction Traffic Management/Property Access Considerations: \_\_\_\_\_

C. Potential environmental impacts: \_\_\_\_\_

**D. Cost Estimate**

- Engineering Design: \_\_\_\_\_
- Environmental Mitigation: \_\_\_\_\_
- R/W Acquisition:  
(C of A if applicable) \_\_\_\_\_
- Utility Relocations: \_\_\_\_\_
- Construction (including const.  
traffic management): \_\_\_\_\_

**TOTAL PROJECT COST** \_\_\_\_\_

E. Expected Funding Source(s) (Highway Priority Program, CMAQ, Urban Systems, Fed/State earmarks, etc.) \_\_\_\_\_

**ATTACH ANY ADDITIONAL DOCUMENTATION** Prepared By: \_\_\_\_\_

**Disposition (circle one):** (1) Advance to Stage 1 (2) Hold for Reconsideration (3) Shelve

**PFC Approval to Advance to Stage 1:** \_\_\_\_\_

## Stage 0 Environmental Checklist

-----

S.P.N. \_\_\_\_\_

F.A.P. No. \_\_\_\_\_

### ADJACENT LAND USE:

\_\_\_\_ Forested  
\_\_\_\_ Marsh/Swamp  
\_\_\_\_ Agriculture  
\_\_\_\_ Commercial  
\_\_\_\_ Industrial  
\_\_\_\_ Residential  
\_\_\_\_ Undeveloped

### Ownership:

\_\_\_\_ Public Ownership  
\_\_\_\_ Private Ownership  
\_\_\_\_ Tribal Government

### Any property enrolled into the Wetland Reserve Program?

(Y or N or Unknown) If so, give the location \_\_\_\_\_

### Community Elements: Is the project impacting or adjacent to any:

(Y or N) Cemeteries \_\_\_\_\_

(Y or N) Churches \_\_\_\_\_

(Y or N) Schools \_\_\_\_\_

(Y or N) Public Facilities (i.e., fire station, library, etc.) \_\_\_\_\_

(Y or N) Community water well/supply \_\_\_\_\_

### Section 4(f) issue: Is the project impacting or adjacent to any:

(Y or N) Public recreation areas \_\_\_\_\_

(Y or N) Public parks \_\_\_\_\_

(Y or N) Wildlife Refuges \_\_\_\_\_

(Y or N) Historic Sites \_\_\_\_\_

**Is the project impacting, or adjacent to, a property listed on the National Register of Historic Places? (Y or N) Is the project within a historic district or a national landmark district? (Y or N)** If the answer is yes to either question, list names and locations below:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Do you know of any threatened or endangered species in the area? (Y or N)**

If so, which species? \_\_\_\_\_

**Does the project impact a stream protected by the Louisiana Scenic Rivers Act? (Y or N)**

If yes, name the stream. \_\_\_\_\_

**Are there any Significant Trees as defined by EDSM I.1.1.21 within proposed ROW?(Y or N)**

If so, where? \_\_\_\_\_

**What year was the existing bridge built? \_\_\_\_\_**

**Are any waterways impacted by the project considered navigable? (Y or N)** If unknown, state so, list the waterways: \_\_\_\_\_

**What types of watercraft are known to use the stream? \_\_\_\_\_**



## Stage 0 Environmental Checklist

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**Hazardous Material:** Have you checked the following DEQ and EPA databases for potential problems?

(Y or N) Leaking Underground Storage Tanks \_\_\_\_\_

(Y or N) CERCLIS \_\_\_\_\_

(Y or N) ERNS \_\_\_\_\_

(Y or N) Enforcement and Compliance History \_\_\_\_\_

If found sites on any of the above lists, give the name and location below:

**Underground Storage Tanks (UST):** Are there any Gasoline Stations or other facilities that may have UST on or adjacent to the project? (Y or N) \_\_\_\_\_

If so, give the name and location: \_\_\_\_\_

**Any chemical plants, refineries or landfills adjacent to the project?** (Y or N) **Any large manufacturing facilities adjacent to the project?** (Y or N) **Dry Cleaners?** (Y or N) If yes to any, give names and locations: \_\_\_\_\_

**Oil/Gas wells:** Have you checked DNR database for registered oil and gas wells? (Y or N)

List the type and location of wells being impacted by the project.

**Are there any possible residential or commercial relocations/displacements?** (Y or N)

How many? \_\_\_\_\_

**Do you know of any sensitive community issues related to the project?** (Y or N)

If so, explain \_\_\_\_\_

**Is the project area population minority or low income?** (Y or N) \_\_\_\_\_

**What type of detour/closures could be used on the job?** \_\_\_\_\_

**Did you notice anything of concern during your site/windshield survey of the area?** If so, explain below.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
**Point of Contact**

\_\_\_\_\_  
**Phone Number**

\_\_\_\_\_  
**Date**

## Stage 0 Environmental Checklist

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### Threatened and Endangered Species Information

<http://www.wlf.state.la.us/apps/netgear/index.asp?cn=lawlf&pid=693>

### LA Wildlife Refuge Information

<http://www.wlf.state.la.us/apps/netgear/page57.asp>

### Louisiana Scenic Rivers Act (R.S. 56:1840-1856)

Louisiana Natural and Scenic Rivers (R.S. 56:1847)

<http://www.legis.state.la.us/tsrs/tsrs.asp?lawbody=RS&title=56&section=1847>

Louisiana Historic and Scenic Rivers (R.S. 56:1856)

<http://www.legis.state.la.us/tsrs/tsrs.asp?lawbody=RS&title=56&section=1856>

### Significant Tree Policy (EDSM I.1.1.21)

EDSM can be found on DOTD's intranet site: <http://ladotnet/>

(Live Oak, Red Oak, White Oak, Magnolia or Cypress, aesthetically important, 18" or greater in diameter at breast height and has form separates it from surrounding or considered historic.)

### LA Historic Sites and Districts

<http://www.crt.state.la.us/nhl2/searchby.asp>

### Hazardous Waste Site Information

<http://www.deq.state.la.us/remediation/lust.htm>

<http://www.epa.gov/superfund/sites/cursites/index.htm>

<http://www.epa.gov/superfund/sites/npl/la.htm>

<http://www.deq.state.la.us/permits/peldumps.htm>

[http://www.nrc.uscg.mil/wdbcgi/wdbcgi.exe/WWWUSER/WEBDB.foia\\_query.show\\_parms](http://www.nrc.uscg.mil/wdbcgi/wdbcgi.exe/WWWUSER/WEBDB.foia_query.show_parms)

<http://www.epa.gov/echo>

### DNR Oil & Gas Well Information

[http://sonris-www.dnr.state.la.us/www\\_root/sonris\\_portal\\_1.htm](http://sonris-www.dnr.state.la.us/www_root/sonris_portal_1.htm) (Use the GIS interactive map)

### Environmental Justice (minority & low income)

<http://www.fhwa.dot.gov/environment/ej2000.htm>

### Demographics

<http://www.state.la.us/census/index.htm>

<http://www.census.gov/>

### Water wells

<http://www.dotd.state.la.us/intermodal/wells/home.asp>

### FHWA's Environmental Website (Just a good reference for understanding NEPA)

<http://www.fhwa.dot.gov/environment/index.htm>

Additional Databases Checked

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Other Comments:

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## Stage 0 Environmental Checklist

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### General Explanation:

To adequately consider projects in Stage 0, some consideration must be given to the human and natural environment which will be impacted by the project. The attached checklist was designed knowing that some environmental issues may surface later in the process. The checklist is designed to obtain basic information, which is readily accessible by reviewing public databases and by visiting the site. It is recognized that some information may be more accessible than other information. Some items on the checklist may be more important than others depending on the type of project. It is recommended that the individual completing the checklist do their best to answer the questions accurately. Feel free to comment or write any explanatory comments at the end of the checklist.

### The Databases:

To assist in gathering public information, page 3 gives web addresses for some of the databases that need to be consulted to complete the checklist. As of July 2003, these addresses were accurate.

Note that you will not have access to the location of any threatened or endangered (T&E) species. The web address just lists the species in Louisiana. It will generally describe their habitat and other information. If you know of any species in the project area, please state so, but you will not be able to confirm it yourself. If you feel this may be an issue, please contact the environmental section. We have biologist on staff who can confirm the presence of a species.

### Why is this information important?

Land Use? Indicator of biological issues such as T&E species or wetlands.

Ownership? Tells us whether coordination with other public or tribal nations will be required.

WRP properties? Farmland that is converted back into wetlands. The Federal government has a permanent easement which cannot be expropriated by the State. Program is operated through the Natural Resources Conservation Service (formerly the Soil Conservation Service).

Community Elements? DOTD would like to limit adverse impacts to communities. Also, public facilities may be costly to relocate.

Section 4(f) issues? USDOT agencies are required by law to avoid certain properties, unless a prudent or feasible alternative is not available.

Historic Properties? Tells us if we have a Section 106 issue on the project. (Section 106 of the National Historic Preservation Act) See <http://www.achp.gov/work106.html> for more details.

Scenic Streams? Scenic streams require a permit and may require restricted construction activities.

Significant Trees? Need coordination and can be important to community.

Age of Bridge? Section 106 may apply. Bridges over 50 years old are evaluated to determine if they are eligible for the National Register of Historic Places.

Navigability? If navigable, will require an assessment of present and future navigation needs and US Coast Guard permit.

Type of watercraft? Assist in determining navigability.

Hazardous Material? Don't want to purchase property if contaminated. Also a safety issue for construction workers if right-of-way is contaminated.

Oil and Gas Wells? Expensive if project hits a well.

Relocations? Important to community. Real Estate costs can be substantial depending on location of project. Can result in organized opposition to a project.

Sensitive Issues? Identification of sensitive issues early greatly assists project team in designing public involvement plan.

Minority/Low Income Populations? Executive Order requires Federal Agencies to identify and address disproportionately high and adverse human health and environmental effects on minority or low income populations. (often referred to as Environmental Justice)

Detours? The detour route may have as many or more impacts. Should be looked at with project. May be unacceptable to the public.

## **5 Stage 1 Standard Operating Procedure**

### **5.1 Purpose**

The objective of Stage 1 (Planning and Environmental Process) is to provide detailed planning and environmental analysis to produce the project scope, location, and major design features; a project cost estimate of engineering, right-of-way, utility relocations, construction, mitigation, construction administration and a reasonable contingency, resulting in the overall project budget in current dollars; and documentation of the environmental decision. The completion of Stage 1 will result in documentation to move a proposed project into Stage 2 (Funding and Project Prioritization).

### **5.2 Process**

All projects, regardless of classification (preservation, operations, safety, capacity or other) and funding source, will be developed and carried through Stage 1 to accomplish the above purpose, using a combination of the appropriate level of preliminary engineering; social, economic and environmental study; and coordination with all regulatory and affected agencies and local governing authorities. For larger projects, this will be accomplished utilizing a project team, comprised of a project managers from the Office of Planning and Programming (PMPP) and the Project Development Division (PMDD), appointed by the Deputy Assistant Secretary of the Office of Planning and Programming and the Chief of the Project Development Division, and a group of staff made up of the necessary disciplines (geometrics, road design, bridge design hydraulics, traffic engineering, real estate, utilities, environmental specialists, planners, etc.) required to evaluate the project in its entirety. Under certain conditions, consultants may serve as project team members. (Refer to Appendix IV for more information on team building.)

Projects that are federally funded, or otherwise require a federal action in order to be implemented, will follow a process in accordance with the National Environmental Policy Act (NEPA). Projects developed in accordance with NEPA will provide one of the following types of environmental decision documentation:

- Categorical Exclusion (CE)
- Environmental Assessment/Finding of No Significant Impact (EA/FONSI)
- Environmental Impact Statement/Record of Decision (EIS/ROD)

Projects that may not initially be considered for Federal funding and do not require a Federal action or permits will be developed following a process closely adhering to the NEPA process. As a result, such projects may be eligible for future Federal funding at subsequent stages of project development, thereby maximizing funding options and minimizing delay. Actions normally taken by the lead Federal agency under NEPA will be the responsibility of the Assistant Secretary of the Office of Planning and Programming and may be delegated at the Assistant Secretary's discretion. Environmental documentation will be one of the following types:

- Environmental Exclusion (EE)
- Environmental Assessment/Environmental Finding (EA/EF)
- Environmental Impact Statement/Environmental Record (EIS/ER)

This Stage 1 standard operating procedure and the *Stage 1 – Planning/Environmental Manual of Standard Practice* will be used to guide the development of Stage 1 documentation.

To initiate Stage 1, a project must have been found feasible in Stage 0 (Feasibility), and the following deliverables (as applicable) provided:

- Preliminary Purpose and Need Statement – a preliminary description of the transportation problem or other needs that the proposed project is intended to address.
- Preliminary Alternatives and Feasibility Analysis – provides conceptual alternatives (including the “no build”) considered technically feasible.
- Preliminary Environmental Review and Budget – identifies potential environmental impacts and issues, especially issues which are likely to stop implementation of the project; also creates a preliminary budget indicating the cost of implementing the project.
- Design Standards and Exceptions – identifies AASHTO and DOTD standards for construction of the project, including any exceptions required and why exceptions are needed.

At the beginning of Stage 1, the type of environmental action required for the project will be determined.

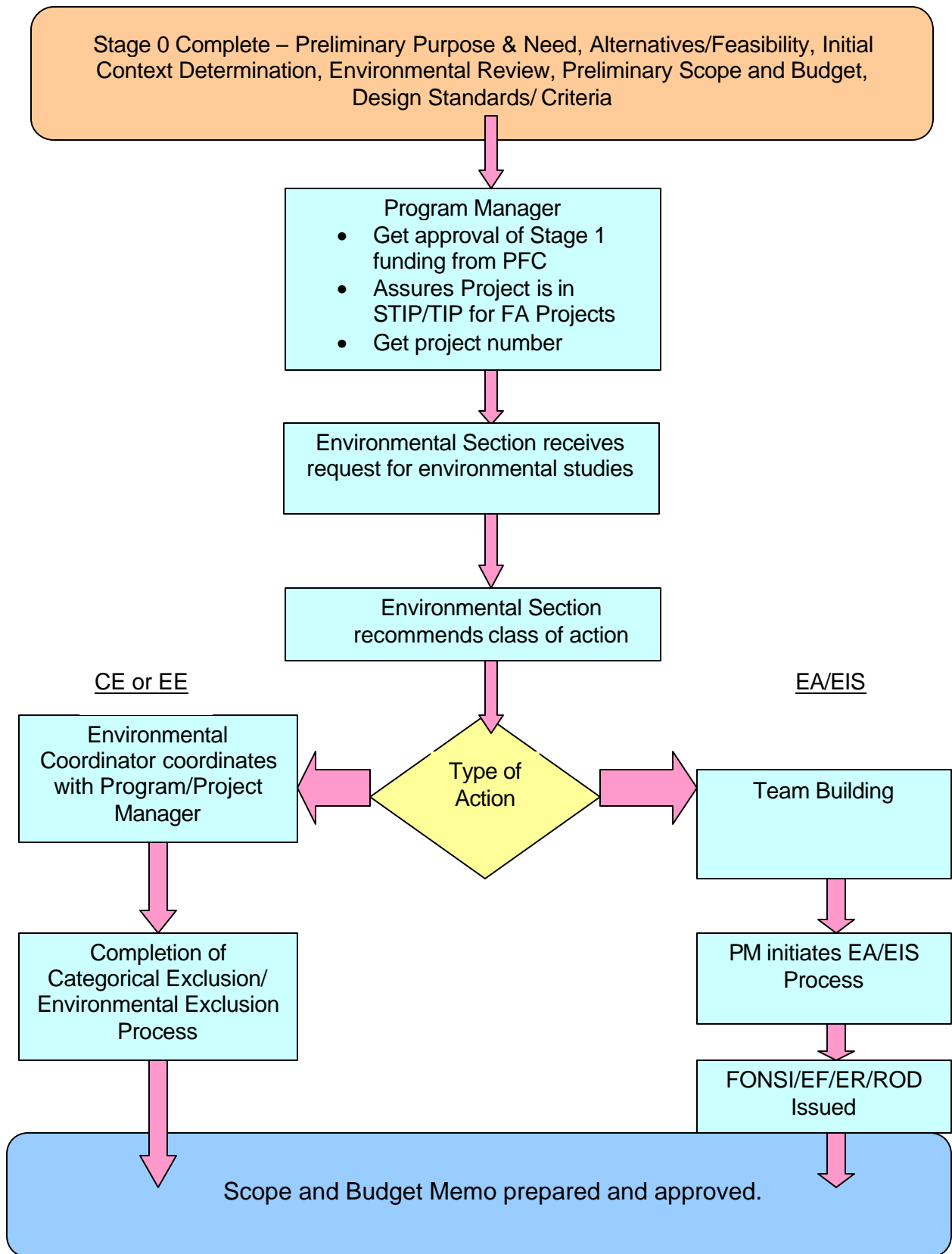
- Based on the Stage 0 determination of project feasibility and a contemplated action of a CE or EE nature, the assigned project manager or program manager prepares the estimated cost for Stage 1 processing, the authorizations required to initiate the Stage 1

process, and advises the “banker” of the project status. The project manager and the Environmental Section staff will produce deliverables using the CE checklists as the process guide (see pages 5-7 through 5-12 for checklists).

- Based on the Stage 0 determination of project feasibility contemplating an EA/FONSI/EF or EIS/ROD/ER, a PMPP and PMDD will be appointed by the Deputy Assistant Secretary of the Office of Planning and Programming and the Chief of the Project Development Division, respectively. A project team will be formed by the project managers as outlined in the sections on “team building.” The PMPP and PMDD will prepare an estimate of funding and authorizations required to complete the Stage 1 process. This request for funding will be coordinated with the “banker.” The Stage 1 EA and EIS processes to be followed are included as checklists in this chapter (see pages 5-12 through 5-14 for checklists).

For the Stage 1 process to be completed, the project must be approved under one of the previously mentioned environmental processes and a Scope and Budget Memorandum must be prepared. See section 5.6 (Deliverables) on page 5-15 for the format and information necessary for the Scope and Budget Memorandum. The Scope and Budget Memorandum will be approved and signed by the Assistant Secretary of the Office of Planning and Programming and the Chief Engineer of the Office of Highways.

Figure 5-1 on the following page provides a flowchart that illustrates the basic steps of the Stage 1 Process.



**Figure 5-1**

### 5.3 Responsibility Matrix

TASK	PLANNING/ SCOPING	ENVIRONMENT	DESIGN	TRAFFIC ENGR.	REAL ESTATE UTILITIES	DISTRICT
1. Preliminary Project Tasks						
a. Prepare NOI (EIS)		Responsible For				
b. Define Study Area	Provide Assistance	Responsible For	Review and Comment			Review and Comment
c. Develop Public Involvement Plan	Provide Assistance	Responsible For				Provide Assistance
d. Prepare SOV		Responsible For	Review and Comment	Provide Assistance		
e. Identify Stakeholders	Provide Assistance	Responsible For	Provide Assistance			Provide Assistance
f. Scoping Meetings	Provide Assistance	Responsible For	Provide Assistance	Provide Assistance		Provide Assistance
2. Purpose and Need						
a. Preliminary P&N	Responsible For	Provide Assistance	Review and Comment	Provide Assistance		Review and Comment
b. Preliminary Environmental Issues	Provide Assistance	Responsible For				Provide Assistance
c. Final P&N	Review and Comment	Responsible For	Review and Comment	Provide Assistance		Review and Comment
3. Alternatives Study						
a. Environmental Screening	Provide Assistance	Responsible For	Provide Assistance			
b. Project Constraint Mapping	Provide Assistance	Responsible For	Provide Assistance			
c. Environmental Inventory	Provide Assistance	Responsible For	Provide Assistance			
d. Preliminary Alternatives	Provide Assistance	Review and Comment	Responsible For	Provide Assistance	Review and Comment	Review and Comment
e. Alternatives Analysis/Screening	Provide Assistance	Responsible For	Review and Comment	Review and Comment		



TASK	PLANNING/ SCOPING	ENVIRONMENT	DESIGN	TRAFFIC ENGR.	REAL ESTATE UTILITIES	DISTRICT
f. Public/Agency Involvement	Provide Assistance	Responsible For	Provide Assistance			Provide Assistance
g. Refine Alternatives	Review and Comment	Review and Comment	Responsible For	Provide Assistance	Review and Comment	Review and Comment
h. Preferred Alternative	Review and Comment	Responsible For	Review and Comment			Review and Comment
4. Environmental Documentation						
a. Draft Document	Review and Comment	Responsible For	Review and Comment	Provide Assistance	Provide Assistance	Provide Assistance
b. Distribute Draft Document	Provide Assistance	Responsible For				
c. Public Hearing	Provide Assistance	Responsible For	Provide Assistance		Provide Assistance	Provide Assistance
d. Technical Reports	Review and Comment	Responsible For				
e. Address Comments	Provide Assistance	Responsible For	Provide Assistance	Provide Assistance	Provide Assistance	Provide Assistance
f. Selected Alternative	Review and Comment	Responsible For	Review and Comment			Review and Comment
g. Prepare Final Documents	Review and Comment	Responsible For	Review and Comment	Provide Assistance	Provide Assistance	Provide Assistance
h. Coordinate Project Budget with Banker	Review and Comment	Responsible For	Review and Comment			Review and Comment
i. Environmental Closure		Responsible For				
j. Scope and Budget Memorandum		Responsible For	Responsible For			

## **5.4 Checklists**

### **5.4.1 Categorical Exclusions Checklist**

Categorical Exclusions are minor environmental determinations concluding that projects will have no significant environmental impacts. These determinations are based on types of projects which have been shown historically to have little or no effect on the environment and would not otherwise be a candidate for an Environmental Assessment or Environmental Impact Statement.

The types of projects eligible for environmental processing as Programmatic Categorical Exclusions are listed in the Consolidated Letter Agreement between the DOTD and Federal Highway Administration (FHWA) dated March 2, 1995, as amended by Consolidated Letter Agreement dated August 30, 1995, and the FHWA letter concerning changes to processing when properties on or eligible for the National Register of Historic places are involved, dated February 29, 2000. The types of projects which may be processed as Programmatic Categorical Exclusions and the information required in making this determination are as follows:

- Actions not leading or involving construction, such as planning and technical studies, grants, research, approvals of plans and programs – A written description of such studies should be sufficient to process these actions programmatically in Stage 1.
- Approval of utility installations along or across highway – A site diagram for the location of a utility across the highway right-of-way must be provided.
- Construction of bicycle and pedestrian paths, related facilities – The specific location, scope and physical description (path routing and typical section) of these facilities must be provided.
- Highway Safety Planning activities – A description of the planning activity needs to be provided. If this is a highway safety project being funded by FHWA, then the specific location of the project and associated safety improvements must be provided for documentation.
- Transfer of Federal lands when not an FHWA action – A description of the land to be transferred and purpose of transfer needs to be provided.
- Installation of sound barriers or soundproofing of publicly-owned buildings – The location and physical description (height, length and construction material) of the installation of the sound barriers or soundproofing must be provided.
- Landscaping – The location and physical description (physical limits, types of plantings, and maintenance requirements) of the landscaping must be provided.

- Installation of fencing, signs, pavement markings, passenger kiosks, traffic signals and railroad warning devices with no substantial land acquisition or traffic disruption – The location and full description (including drawings) of these items must be provided.
- Emergency repairs – The location and full description (type of repair, physical limits and emergency purpose) of the emergency repairs must be provided.
- Acquisition of scenic easements – The location (physical limits) and need (view shed) for the acquisition must be provided.
- Determination of payback for property previously acquired with FA participation – The location of property (physical and legal description), amount of payback, and reason for payback must be provided.
- Improvements to rest areas and weigh stations – The location and nature of the improvements (buildings, grounds, and systems) must be provided.
- Ridesharing activities – Information relative to the ridesharing activity must be provided.
- Alterations to facilities and vehicles for handicapped/elderly accessibility – The location and description of the facilities and/or vehicles (type of accessibility provided and compliance with ADA) to be altered must be provided.
- Track and rail bed maintenance and improvements inside existing right-of-way – The location and description (type of maintenance and physical limits) of the improvements must be provided.
- Promulgation of rules, regulations and directives – A copy of the rules, regulations or directives must be provided.
- Resurfacing, rehabilitation, or restoration of existing highway (no additional lanes) – The location, physical limits and scope of the rehabilitation or restoration (typical section, construction and right-of-way limits) of the highway must be provided.
- Minor widening/adding shoulders (no additional lanes) – The location, physical limits and scope of the widening or shoulder addition (typical section, construction and right-of-way limits) must be provided.
- Adding or lengthening turn lanes and intersection improvements – The location, physical limits (typical section, construction and right-of-way limits) and scope of the addition or lengthening of the improvement must be provided.
- Safety or traffic operational improvements (lighting, attenuators, barriers, guardrails, skid resistant surfaces, realignment of hazardous curves, glare screens) – The specific location, physical limits (typical section, construction and right-of-way limits) and scope of the improvement must be provided.
- Bridge rehabilitation, reconstruction, or replacement or grade separation to replace at-grade railroad crossings – The location, physical limits (alignment, plan and profile,

typical section, construction and right-of-way limits) and scope of the improvement must be provided.

- Replacement or rehabilitation of culverts, inlets and drainage pipes – The specific location, physical limits (construction and right-of-way limits), and scope of the improvement must be provided.
- Flattening slopes – The location, physical limits (construction and right-of-way limits) and scope of the improvement must be provided.
- Clear zone safety improvements (obstacle removal or relocation) – The specific location, physical limits, and scope of the improvements must be provided.
- Motorist aid or highway information systems – The location, physical limits (construction and right-of-way limits) and scope (coverage) of the system must be provided.
- Freeway traffic surveillance and control systems - The specific location, physical limits (construction and right-of-way limits) and scope of the system must be provided.
- Disposal of excess right-of-way or joint use/limited use of right-of-way – The location, physical and legal description of property and scope of the disposal must be provided.
- Kiosks and facilities (enhancements) – The specific location, physical description (site map and drawings) and scope of the enhancement must be provided.
- Improvements to or rehabilitation of historic transportation facilities (enhancements) – The location, physical description (site maps and engineering/architectural drawings) and scope of the improvement must be provided.

Under the letter agreement, the FHWA has authorized the Environmental Section to review information and plans to determine the applicability of the use of programmatic approvals. If the project meets the requirements contained in the Consolidated Letter Agreement, as amended, the project may proceed without having to be submitted to FHWA for approval. The EEA certifies by signed approval that due consideration has been given for the project to be classified as a categorical exclusion.

For state-funded projects, or projects which may not otherwise require NEPA approvals, the EEA shall retain the authority to approve these projects types as listed, certifying that due consideration has been given for the project to be classified as an environmental exclusion (named as to not be confused by terminology used in Federal law).

Stage 1 for these projects shall be deemed complete upon the EEA's determination that the project meets the definition of a project which meets the above requirements and preparation of a Scope and Budget Memorandum that is jointly approved by the Assistant Secretary, Office of Planning and Programming, and the Chief Engineer of the Office of Highways.

The use of programmatic Categorical Exclusions is predicated on the requirement that certain conditions do not occur on the project; i.e., if these circumstances do occur on a project under consideration, documentation must be provided to address these circumstances. The circumstances under which a programmatic Categorical Exclusion determination may not be granted are as follows:

- Have unusual or controversial issues involved – public or agency involvement notes than the project is unusual or controversial.
- Use of properties protected under Section 4(f) (49 USC 303) or Section 6(f) of the Water Conservation Act – Public Outdoor Recreation Use - Section 4(f) applies to approval of a project requiring the use of publicly owned land of a public park, recreation areas or wildlife and waterfowl refuge, or land of an historic site of national, State, or local significance (as determined by the Federal State, or local officials having jurisdiction over the park, recreation areas refuge, or site) only if (1) there is no prudent and feasible alternative to using that land; and (2) the program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuges or historic site resulting from the use. Section 6(f) of the Land and Water Conservation Fund Act prohibits the conversion of property acquired or developed with these grants to a non-recreational purpose without the approval of the Department of the Interior's (DOI) National Park Service.
- Properties on or eligible for the National Register of Historic Places - The National Register of Historic Places is the nation's official list of cultural resources worthy of preservation. Properties listed in the register include districts, sites, buildings, structures, and objects that are significant in American history, architecture, archeology, engineering, and culture.
- Adversely effect wetlands, with substantial takings or other adverse comment on wetland issues from agencies - Section 404 of the Clean Water Act establishes a program to regulate the discharge of dredged and fill material into waters of the United States, including wetlands. Activities in waters of the United States that are regulated under this program include fills for development, water resource projects (such as dams and levees), infrastructure development (such as highways and airports), and conversion of wetlands to uplands for farming and forestry.
- Encroachments of a regulatory floodway or effect 100-year base floodplain elevations of a watercourse or lake - The regulatory floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 100-year flood discharge can be conveyed without increasing the base flood elevation more than a

specified amount. FEMA has mandated that projects can cause no rise in the regulatory floodway, and a one-foot cumulative rise for all projects in the base 100-year elevation.

- Across or adjacent to National System of Wild and Scenic Rivers – In 1968, Congress created the National Wild and Scenic Rivers System, declaring that the established national policy of dams and other construction at appropriate sections of the rivers of the United States needs to be complemented by a policy that would preserve other selected rivers or sections thereof in their free-flowing condition to protect the water quality of such rivers and to fulfill other vital national conservation purposes.
- Known hazardous waste sites or previous land use with potential for hazardous waste within the right-of-way – The Resource Conservation and Recovery Act describes the requirements for hazardous waste generation, identification and disposal. Potentially responsible parties under RCRA must pay for recovery and disposal of hazardous wastes unless “due diligence” studies are performed.
- Acquisition of more than minor amounts of right-of-way or displacements
- Adverse affect on endangered or threatened species and their habitat – The purpose of the Endangered Species Act is to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved and provide a program for the conservation of such endangered species and threatened species.
- Action is not consistent with the State’s Coastal Zone Management Plan – The Louisiana Department of Natural Resources, Coastal Management Division is responsible for the implementation of the Louisiana Coastal Resources Program (LCRP), an effort among Louisiana citizens, as well as state, federal and local advisory and regulatory agencies to preserve, restore, and enhance Louisiana's valuable coastal resources by sound management.

If such projects do not involve significant environmental impacts, then a categorical exclusion determination may be granted if proper documentation is prepared to address these conditions.

For projects requiring NEPA approvals, the Lead Federal Agency shall review and approve the environmental documentation and make a determination that the project is categorically excluded.

For state-funded projects, or projects which may not otherwise require NEPA approvals, the EEA shall make a determination, based on sound judgment of the impacts and conditions involved, that the project should be environmentally excluded (named as to not be confused by terminology used in Federal law).

Stage 1 for these projects shall be deemed complete upon the EEA's determination that the project meets the definition of a project which meets the above requirements and preparation of a Scope and Budget Memorandum that is jointly approved by the Assistant Secretary of the Office of Planning and Programming and the Chief Engineer of the Office of Highways.

#### **5.4.2 Environmental Assessments Checklist**

When a project does not meet the definition of a categorical exclusion and does not clearly require the preparation of an environmental impact statement, an environmental assessment should be prepared to determine (1) the presence of no significant impacts to the environment, or (2) that significant impacts to the environment will result and an environmental impact statement must be prepared.

Upon determination that the project should be processed utilizing an environmental assessment (by the Lead Federal Agency for NEPA, by the EEA for State-funded or non-NEPA), the EEA shall request a project manager from the Deputy Assistant Secretary, Office of Planning and Programming. The Deputy Assistant Secretary will appoint a PMPP and will negotiate a PMDD from the design sections with the Project Development Division Chief.

The PMPP and PMDD will meet to review the results of the Stage 0. Based on this review, they will establish the disciplines that will comprise the initial project team. As the Stage 1 process continues, membership on the project team may include additional disciplines or exempt others as necessary to address the planning, environmental, design and construction requirements of the project.

The results of Stage 1 shall identify the following:

- Environmental assessment documentation of the social, economic and natural environmental impacts of the project
- List of permits required to implement the project
- Location and major design features of the project
- Updated cost estimate, including engineering, construction, right-of-way, utilities, and environmental mitigation
- Mitigation and environmental commitments to be implemented in further stages of project development

For projects requiring NEPA approvals, the Lead Federal Agency shall review the environmental documentation and either (1) approve the environmental assessment by issuing a Finding of No Significant Impact, or (2) notify the DOTD that an environmental impact statement must be prepared to address significant impacts to the environment.

For state-funded projects, or projects which may not otherwise require NEPA approvals, the EEA shall make a determination, based on sound judgment of the impacts and conditions involved, that the project should either (1) receive an environmental finding (named as to not be confused by terminology used in Federal law), or (2) require the preparation of an environmental impact statement.

Stage 1 for these projects shall be deemed complete upon issuance of the FONSI or EF and the project manager's preparation of a Scope and Budget Memorandum that is jointly approved by the Assistant Secretary of the Office of Planning and Programming and the Chief Engineer of the Office of Highways.

#### **5.4.3 Environmental Impact Statements Checklist**

An environmental impact statement must be prepared when it is likely that significant impacts to the environment will result from the implementation of the project.

Upon determination that the project should be processed utilizing an EIS (by the Lead Federal Agency for NEPA, by the EEA for State-funded or non-NEPA), the EEA shall request a project manager from the Deputy Assistant Secretary, Office of Planning and Programming. The Deputy Assistant Secretary will appoint a PMPP and will negotiate a PMDD from the design sections with the Project Development Division Chief.

The PMPP and PMDD will meet to review the results of Stage 0. Based on this review, they will establish the disciplines that will comprise the initial project team. As the Stage 1 process continues, membership on the project team may include additional disciplines or exempt others as necessary to address the planning, environmental, design and construction requirements of the project.

The results of Stage 1 shall identify the following:

- A final EIS documentation of the social, economic and natural environmental impacts of the project
- Location and major design features of the project



- Updated cost estimate, including engineering, construction, right-of-way, utilities, and environmental mitigation
- Mitigation and environmental commitments to be implemented in further Stages of Project Development
- List of permits required to implement the project

For projects requiring NEPA approvals, the Lead Federal Agency shall review the final environmental impact statement and issue a record of decision.

For state-funded projects, or projects which may not otherwise require NEPA approvals, the EEA shall make a determination, based on sound judgment of the impacts and conditions involved, that the project should receive an environmental record (named as to not be confused by terminology used in Federal law).

Stage 1 for these projects shall be deemed complete upon issuance of the ROD or ER and the Project Manager's preparation of a Scope and Budget Memorandum that is jointly approved by the Assistant Secretary, Office of Planning and Programming, and the Chief Engineer of the Office of Highways.

## ***5.5 Project Finance Committee (PFC) Duties in Stage 1***

A decision by the Stage 0 committee that a proposed project is a "go" initiates the following actions:

- The PFC coordinates the establishment of the preliminary budget for that project (assigns a project #) for all work categories (planning, design, etc).
- The PFC authorizes (encumbers/obligates) cash to be set up on the project for phase 1 activities only (the form goes from PFC to project control to execute this task). The PFC coordinates with the Planning and Programming Section to insure the project is included in the State Transportation Improvement Program (STIP) and the legislatively approved DOTD Highway program.
- The PFC develops a menu of financing options to pay for all new Stage 1 projects. PFC develops an internal "most feasible" funding solution.

- At the conclusion of Stage 1 work, PFC balances cash expenditures against budget.

## **5.6 Deliverables**

At the completion of Stage 1, the following deliverables are required to advance the project to Stage 2 (Prior to finalization, the Scope and Budget Memorandum will be coordinated with the Project Finance Committee.)

- Environmental Closure Document
  - Categorical Exclusion/Environmental Exclusion
  - Environmental Assessment/Finding of No Significant Impact/Environmental Finding
  - Final Environmental Impact Statement/Record of Decision/Environmental Record
- Scope and Budget Memorandum
  - Description of the Project and Selected Alternative
    - Location, Preferred Alignment, and Major Design Features
    - Context-Sensitive Issues and Design Exceptions
    - Maps and Exhibits, as necessary
  - Funding for full project implementation
    - Estimates
      - Construction
      - Engineering
      - Real Estate Acquisition
      - Utility Relocation
      - Environmental Mitigation/Commitments
      - Traffic Management
    - Possible funding categories/mechanisms
  - List of Commitments, Agreements and Permits
    - Commitments which need to be incorporated into the Plans, Specifications and Estimate (Stages 3 and 4)
    - Agency Agreements
      - Memoranda of Understanding
      - Memoranda of Agreement
    - Permits
      - Coast Guard (Section 9, General Bridge Act of 1946)
      - Corps of Engineers (Section 404, Section 10)

- LA DEQ (Water Quality Certification and NPDES)
  - LA DNR (Coastal Use)
  - LA WL&F (LA Scenic Streams)
- Signatures
  - Recommendations
    - Project manager, Planning/Environmental (PMPP)
    - Project manager, Design/Project Development (PMDD)
  - Approval
    - Assistant Secretary, Office of Planning and Programming
    - Chief Engineer, Office of Highways

### **5.6.1 Performance Indicators**

Performance indicators for Stage 1 will be based on the timeliness and quality of the outputs of the process. Timeliness will be measured by the achievement of the delivery date for the completed Scope and Budget Memorandum as initially set by the project manager. Quality will be indicated by a survey of the major participants in the Stage 1 process. (Details of these measures to be developed.)

## **6 Stage 2 Standard Operating Procedure**

### **6.1 Purpose**

The purpose of Stage 2 (Funding) is to provide guidance on projects which have completed Stage 1 (Planning and Environmental Process) and are ready to proceed into Stage 3 (Final Design Process). The objectives of Stage 2 are to update the cost estimate and insure funding is available to proceed, develop the project plan and project delivery date (PDD), establish the program fiscal year (for the construction letting), determine the funding source, and insure the project is included in the State Transportation Improvement Program (STIP) and Highway Program, as appropriate.

### **6.2 Process**

Generally, the two types of projects that complete Stage 1 and proceed into Stage 2 are 1) those that are initiated in the regular Highway Priority Program, and 2) those that are initiated by others with earmarked funds. Two scenarios for handling these projects are defined as follows. The flowchart on page 6-6 illustrates these two scenarios.

#### **6.2.1 Projects Initiated through Regular Priority Program**

For a project to have progressed through Stages 0 and 1 in the regular Priority Program, the project selection team must have anticipated that the funding of the project would fall within the constraints of budget partition in the near future. Therefore, in general terms, projects that come through the priority program should be funded and should not be held in Stage 2 for long, unless the estimate increased significantly from the previous stages.

Once a project has completed Stage 1, the project manager should check/update the cost estimate. The project manager should review the scope and updated estimate with the program manager to insure the project still addresses the original intent and falls within the budget constraints of the program. If the updated estimate reveals a funding problem, a decision will have to be made whether or not to continue with the project as is, go back to Stage 0 and reduce the scope, or coordinate with the banker (or project finance committee) to develop a plan to secure additional funding. Ideally, most projects will proceed as is, since significant cost increases would have been reconciled with the project selection team and/or program manager during Stage 1.

At this point, the project manager will develop a preliminary project plan that lays out the tasks, timeframes, and manpower requirements. This preliminary plan should assume that funding and manpower will not be a problem. Next, the project manager and the program manager must determine when the project can be funded and establish a tentative program fiscal year. The program fiscal year is the year the project will be let to construction. If necessary, the time frames in the preliminary project plan should be revised to match the funding time frame. Next, the project manager and the discipline managers (Road Design, Bridge Design, Real Estate, etc.), using the Program and Project Management System (PPMS) system if possible, must determine if manpower will be available to meet the proposed schedule. (Note: PPMS is a new project management system currently being implemented by DOTD's Project Development Division.) If manpower is available, a PDD can be established and the project can proceed into Stage 3. Note that the PDD must be in the fiscal year preceding the program fiscal year. If manpower is not available to meet the schedule, the use of consultants can be pursued, or the project plan, PDD, and program fiscal year can be revised to accommodate the availability of manpower.

Although the program manager has a budget to work within, specific sources of funding to be used for each project may not be known at the onset of a project. The program manager should work with the highway program engineer to determine a tentative funding type, such as National Highway System (NHS), Surface Transportation Program (STP), state cash, etc. Once the entire program is developed and funding requirements are reconciled with available funds, the highway program engineer or banker (or project finance committee) may change the specific funding type as needed.

At this point, the project should have a project plan, PDD, program fiscal year, and an identified funding type. The highway program engineer will insure that the project is programmed accordingly in the STIP and Highway Priority Program. The project manager will insure that the appropriate information for the project is entered into the PPMS system.

### **6.2.2 Projects Initiated with Earmarked (Federal Demonstration Funds or State Bond Funds)**

It is not uncommon for earmarked funds to be made available by Congress (or the Louisiana legislature) to begin the feasibility and/or environmental studies for a project. If a Demonstration or Bond project completes Stage 1, the project manager, in conjunction with the DEMO program manager, should review the status of funding to determine how much is

available to continue with the development of the project. The project estimate should also be checked and/or updated at this time.

The project manager should identify the activities (engineering, right-of-way, utilities, construction) which can be accomplished with the available funds. For example, if funding is only available for engineering, the project manager should be able to inform the project sponsors and the applicable Congressman or Louisiana legislator when additional funds will be needed. Therefore, a tentative project plan would be needed.

Activities for which funding is available should be programmed in the STIP and Highway Priority Program. The project manager should coordinate with the discipline managers (using PPMS if possible) to insure personnel are available to proceed with the project.

The program manager should inform the appropriate project sponsor, Congressman, and/or Louisiana legislator of any additional funding needed to continue or complete the project.

If construction funding is not available, a PDD should not be established. If construction funding is available, a PDD should be established by the project manager and program manager.

### **6.3 *Responsibility Matrix/ Checklist***

See page 6-5.

### **6.4 *Project Finance Committee (PFC) Duties in Stage 2***

- The PFC receives and reviews the Scope and Budget Memorandum (deliverable from Stage 1 committee). The PFC compares cost estimate #2 (another deliverable from the Stage 1 committee) with cost estimate #1 and assesses the impact on the preliminary project and projected program budget.
- The PFC compares project budget impacts with preliminary “most feasible” funding solution. If a project is no longer determined to be financially feasible, it is returned to Stage 1 committee for possible scope revisions (a report from the PFC to Stage 1 committee with justification).

- If the project remains financially infeasible, project sponsors are formally notified and project is removed from the program.
- The PFC authorizes (encumbers/obligates) cash for necessary stage 3 work.
- The PFC coordinates with the scheduler (Stage 4 committee) and develops a preliminary cash flow plan for the project.
- PFC authorizes cash for Stage 3 work by work categories, as it progresses from phase to phase.

## **6.5 Deliverables**

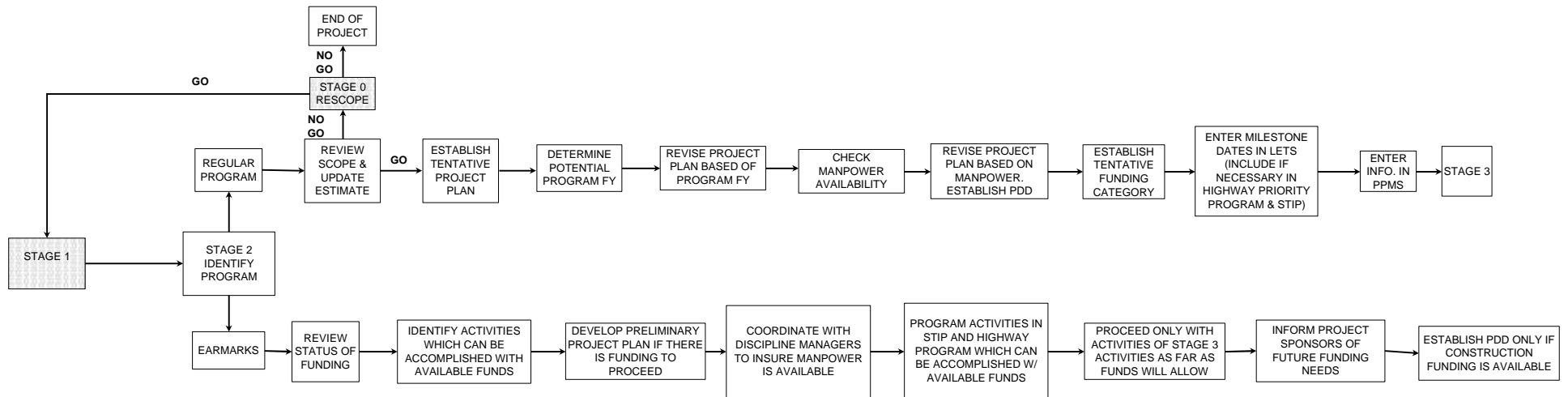
The deliverables from stage 2 are:

- Updated Cost Estimate
- Project Plan
- PDD
- Program Fiscal Year (year of construction letting)
- Funding Source Identified

STAGE 2 STANDARD OPERATING PROCEDURE			
CHECKLIST AND RESPONSIBILITY MATRIX			
		TASK	RESPONSIBLE PARTY
1		IDENTIFY ORIGIN OF PROJECT (PRIORITY PROG/DEMO...)	HIGHWAY PROGRAM ENGINEER
2		IF ORIGIN IS PRIORITY PROGRAM:	
	A	CHECK ESTIMATE, UPDATE IF NECESSARY	PROJECT MANAGER
	B	REVIEW ESTIMATE, DECIDE GO OR NO/GO	PROGRAM MANAGER
	C	ESTABLISH PRELIMINARY PROJECT PLAN	PROJECT MANAGER
	D	DETERMINE POTENTIAL PROGRAM FISCAL YEAR	PROGRAM MANAGER
	E	ADJUST PREL. PROJECT PLAN TO COINCIDE WITH PROGRAM FY	PROJECT MANAGER
	F	CHECK MANPOWER AVAILABILITY TO MEET PRELIMINARY PROGRAM PLAN	PROJECT MANAGER
	G	REVISE PROJECT PLAN / PROGRAM FY AS NEEDED. ESTABLISH PDD	PROJECT & PROGRAM MANAGER
	H	ESTABLISH TENTATIVE FUNDING SOURCE (NHS, STPFLEX, STATE CASH, ETC.)	HIGHWAY PROGRAM ENGINEER
	I	ENTER MILESTONE DATES, PDD, PROGRAM FY, ETC. IN LETS	HIGHWAY PROGRAM ENGINEER
	J	ENTER PROJECT INFORMATION IN PPMS SYSTEM	PROJECT MANAGER
	K	CHANGES IN PDD (WITH RECOMMENDATION OF PROJECT AND PROGRAM MGR)	DIVISION HEAD OF PROJECT MANAGER
3		IF ORIGIN IS DEMO, BOND, OR OTHER EARMARKED FUNDS	
	B	REVIEW STATUS OF FUNDING. DETERMINE AMOUNT AVAILABLE TO PROCEED	PROJECT AND PROGRAM MANAGER
	C	IDENTIFY ACTIVITIES WHICH CAN BE ACCOMPLISHED WITH AVAILABLE FUNDS	PROJECT MANAGER
	D	DEVELOP PRELIMINARY PROJECT PLAN IF THERE IS FUNDING TO PROCEED	PROJECT MANAGER
	E	COORDINATE WITH DISCIPLINE MANAGERS TO INSURE MANPOWER IS AVAILABLE. PROGRAM ACTIVITIES IN STIP AND HIGHWAY PROGRAM.	PROJECT MANAGER
	F	PROCEED WITH STAGE 3 ACTIVITIES AS FAR AS FUNDS WILL ALLOW	PROJECT MANAGER
	G	INFORM PROJECT SPONSORS, CONGRESSMEN, LEGISLATORS OF FUTURE FUNDING NEEDS	PROGRAM MANAGER
	H	ESTABLISH PDD ONLY IF CONSTRUCTION FUNDING IS AVAILABLE	PROJECT AND PROGRAM MANAGER



## STAGE 2 OPERATING PROCEDURES FLOW CHART



## 7 Stage 3 Standard Operating Procedure

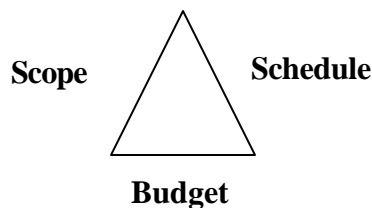
### 7.1 Purpose

The primary purpose of Stage 3 (Final Design Process) is to execute the project development within scope, on schedule, and within budget. The needed input from Stage 2 into Stage 3 is a well-defined scope and preliminary schedule and an up-to-date budget for all aspects of the project. The output of Stage 3 is signed final plans, specifications, and an approved estimate ready for letting. In addition, the rights of way should be purchased, all required agreements secured (utility, railroad, cooperative endeavor, etc.), and all environmental and non-environmental permits obtained that are required for letting. The completion of the above activities defines the project delivery date (PDD).

Implementation of the Program Project Management System (PPMS), using project scheduling software, provides a tool for effective management of project schedules, assigned resources, and the resulting cost to complete projects. The purpose of using PPMS is to enhance communication and coordination between staff engaged in project and program delivery at the project team, office, region, and statewide levels.

The challenge is to get the job done on time, within budget, and according to the agreed scope while meeting or exceeding customer and stakeholder expectations. At this point in the project delivery process, the development and function of the project team is critical for success.

Ongoing and active management of the project's "triple constraints" (scope, schedule, and budget as shown below) is a primary focus of project management.



Key features of effectively managing project delivery include the following:

- Building an interdisciplinary team having the skills necessary for the project.
- Including the customers in the project delivery process.

- Communicating with all involved parties.
- Managing change.

Successful project delivery results from active project management and a team with the right resources that acts with a common purpose. The Managing Project Delivery process is applied by project managers and teams.

- Preparation – “Plan the Work”
- Execution – “Work the Plan”

While the assignment of organizations and individuals to a project is an essential first step, mere assignment does not result in an effective team. Teams must be built and sustained. For successful project delivery, the participants must conduct their efforts in a coordinated and complimentary manner. Establishing communication among the team member who will develop and deliver the project is the most important function of this first step of Managing Project Delivery. Successful project delivery starts with mobilizing the necessary resources and aligning all participants toward a common goal.

Building and sustaining an effective project team involves developing and constantly reinforcing a common understanding of:

- Project scope
- Team mission
- Participant roles and responsibilities
- Project boundaries
- Critical success factors

The project team is a designated group of individuals working together with a common purpose related to a specific project. A critical aspect of project success is mobilizing and aligning individuals around a project to effectively deliver the product.

## **7.2 Process**

The goal of the project team should be to develop a work plan that is comprehensive, realistic, deliverable, and endorsed by all team members. It is imperative to understand and communicate the distinction between the project work plan (including schedule and

cost to complete) to accomplish the defined team mission and the effort to deliver the Highway Construction Program in terms of preliminary final engineering and right-of-way.

The scope of work, scheduled to deliver, and the estimated cost to complete a Highway Construction Program project (including engineering, right of way utility, and construction phases) are developed by the project team during the scoping phase. Once a Highway Construction Program project's scope, schedule, and budget have been established, any change in scope, schedule or budget will require approval from the Chief Engineer and Assistant Secretary of Planning and Program through the use of change in Scope and Budget Memorandum.

A project schedule is a systematic map of the hierarchical project tasks necessary to accomplish the team mission, taken to the lowest level of detail necessary to describe and assign the tasks. The team develops the project schedule with input from project customers and stakeholders. The project schedule includes all tasks necessary to accomplish the team mission.

The task activity list is attached for both a standard project as well as a summary project. The use of the standard or summary activity list is at the discretion of the project manager; however, the more complex projects should utilize the standard list and smaller, less complex ones should utilize the summary list.

A task is an assignable item of work that has:

- A definable beginning and end.
- A finite planned duration.
- A state of completion that can be estimated at any time.
- A reviewable internal or external deliverable at the task's completion.

All projects in the Louisiana Highway Construction Program are managed by a schedule of required activities that is based on the standardized master template and rules. The schedule to complete the team mission is developed from the work breakdown structure and the subsequent task planning. The schedule is a dynamic tool. It defines the start, order, and duration of project tasks and milestones. A collaboratively developed and comprehensive schedule is fundamental tool for the subsequent management and delivery of the project. It is used to communicate, coordinate, and measure project progress.

Successful project delivery requires active management of scope, schedule, and budget including the following:

- An endorsed base line scope, schedule, and budget.
- Ongoing communication with all team members to get frequent and accurate data on progress.
- Regular schedule and budget monitoring and evaluation with revisions to reflect actual progress, as appropriate.
- Regularly reporting progress to customers and stakeholders.
- Application of resources to meet schedule.

All projects in the department's Highway Construction Program will maintain current schedules in the PPMS and will be updated frequently to ensure the project delivery date shown in PPMS is accurate and can be met.

Significant milestones in the standard activity list are as follows: (the numbers following the tasks correspond with the Activity ID)

1. Completion of topographic survey, PPD 120
2. 60% preliminary design geometric review, PPD420
3. 60% preliminary design hydraulic review, PPD440
4. Develop preliminary pavement design, PPD808
5. Plan-in-hand meeting, PPD570
6. Joint plan review (R/W), PPD020
7. Advance check prints, FP0490
8. Release letter (utilities), FD0480
9. Certify R/W complete, FD0540
10. Finalize permit, FD0350
11. Develop construction proposal, FD0580 (including contact time and innovated bidding practice)
12. Plan signed by Chief, FD0590

Of these the following are major milestones:

1. Plan in hand meeting, PD0570
2. Joint Plan Review (R/W), FD0020
3. Advance check prints, FD0490

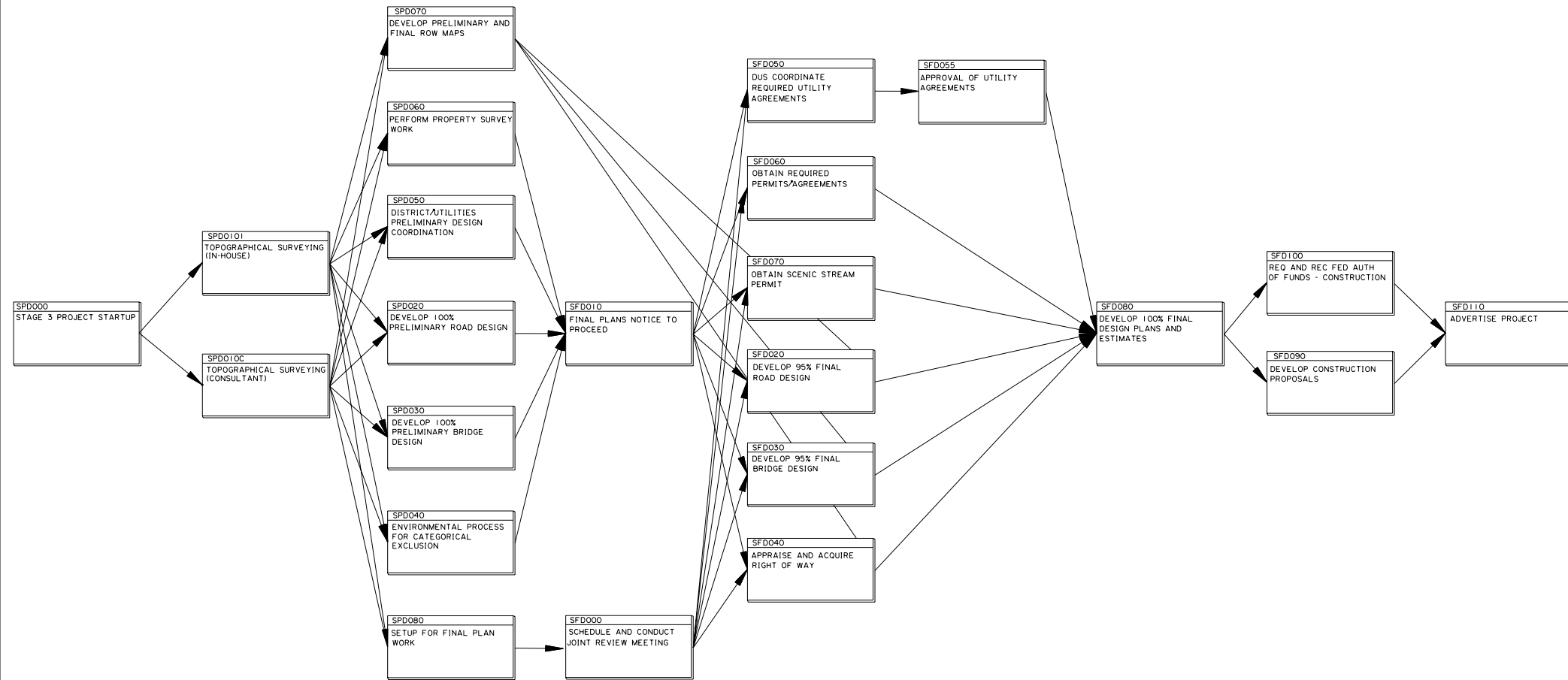
Each of these three major milestones require, as outlined in existing design manuals, significant reviews, including field reviews, and cost updates.

Recognizing and confronting change, rather than avoiding it, is key to successful project delivery. Value can be added through appropriate change management. In order to provide proper documentation, the Change Scope and Budget Memorandum should include the following sections:

- Project Overview- narrative of what the project is about.
- Original Project Scope- the project objective and scope.
- Change Project Scope- the revised objective and scope.
- Reasons- identify reasons for the change in scope and budget.
- Environmental Requirements, Content Sensitive and Design Exceptions- outline any changes to the original environmental requirements, content sensitive and design exceptions.
- Project Schedule- indicates any changes in the original project schedule and major milestones.
- Budget and Funding- identify changes in the project funding or timing affected by the change in scope or budget.

See the following page for a flowchart representing the Stage 3 process (figure 7-1).

# PPMS SUMMARY ACTIVITY TEMPLATE



### **7.3 Responsibility Matrix/ Checklist**

See pages 7-9 through 7-18.

### **7.4 Project Finance Committee (PFC) Duties in Stage 3**

- The PFC monitors and tracks expenditures vs. budget for Stage 3 work.
- If a project is determined to be financially feasible, the PFC authorizes the appropriate project budget adjustments and establishes the funding allocation plan. The funding allocation plan includes the sources, methodology, and timing to finance the project (a formal report to project control, the program manager, the project manager, the Stage 3 committee, and management).
- The PFC receives and reviews the final cost estimate provided by the Stage 3 committee. The PFC compares the final cost estimate with cost estimate #2 and assesses the impact on the preliminary project budget.
- The PFC compares project budget impacts with project financing plan. If the project final cost estimate exceeds the established program budget partition allocation, the PFC develops several courses of action for revisions to budget partition allocations (zero sum game, recommendations on how to “fit” the project in). The Stage 3 committee validates cost escalation factors and develops value engineering ideas, innovative contracting techniques, etc., to attempt to lower project costs.
- The PFC coordinates with management, stage 3 committee and program managers to evaluate the courses of action and make a decision.
- PFC authorizes cash for Stage 4 in accordance with the project cash flow plan.
- Based on decision, PFC adjusts program budget partitions, project budget, and cash flow plans. They advise Planning and Programming for adjustments to STIP.



## **7.5 Deliverables**

- Signed final plans
- Specifications
- Approved estimate ready for letting
- Rights-of-way purchased
- Required agreements secured (utility, railroad, cooperative endeavor, etc.)
- All environmental and non-environmental permits obtained
- Construction duration

### **7.5.1 Performance Indicators**

Performance indicators for Stage 3 concentrate on two components, budget and schedule. The three major milestones listed above are to be used to track the budget and schedule. The performance indicator for budget and schedule is made at the completion of Stage 3.

<b>Standard Activities</b>		
<b>Activity ID</b>	<b>Activity Description</b>	<b>Functional Responsibility</b>
PD0002	Compile Project Assessment Data	Project Manager
PD0004	Prepare Scope and Fee Package	Project Manager
PD0006	Prepare Consultant Advertisement	Consultant Contracts
PD0008	Advertise and Select Consultant	Consultant Contracts
PD0010	Prepare Original Contract	Consultant Contracts
PD0012	Request and Rec. Fed. Auth. of Funds - Consultant Engineering	Project Control
PD0015	Develop Notice to Proceed	Consultant Contracts
PD0020	Assemble Project Management Team	Project Manager
PD0030	Conduct Project Kickoff Meeting	Project Manager
PD0032	Request Traffic Data	Project Manager
PD0034	Develop Traffic Data	Planning and Programming
PD0035	PM Requests Traffic Analysis	Project Manager
PD0036	PM Requests Subgrade Soil, PH/Resistivity, and Pvm Design	Project Manager
PD0037	Perform Preliminary Traffic Analysis	Geometrics
PD0040	Prepare and Distribute Predesign Form	Project Manager
PD0060	Conduct Predesign Meeting	Project Manager
PD0070	Request Topographic Surveys	Project Manager
PD0080	Develop Preliminary Pavement Design	Pavement and Geotechnical
PD0082	Develop Preliminary Life Cycle Costs Analysis (LCCA)	Pavement and Geotechnical
PD0090	Perform Topographic Surveys	Location and Survey
PD0120	Develop Digital Electronic Survey Package	Location and Survey
PD0130	Pavement Review Committee Process	Pavement and Geotechnical
PD0140	Request Subgrade Soil Survey	Pavement and Geotechnical
PD0150	Make Topographic and Utility Information Available	Location and Survey
PD0160	Perform Subgrade Soil Survey	District Lab Engineer
PD0170	Preliminary Plans Notice to Proceed	Project Manager
PD0180	Develop 30% Preliminary Design - Bridge	Bridge Design
PD0190	Develop 30% Preliminary Design - Roads	Road Design
PD0200	Coordinate Preliminary Design with Railroad(s)	Highway/Rail Safety
PD0210	Order Subsurface Investigation for Project	Pavement and Geotechnical
PD0220	Develop 60% Preliminary Design - Roads	Road Design
PD0230	Furnish All Subsurface Investigation Data for Project	Materials and Testing Section
PD0240	Develop Final Pavement Design	Pavement and Geotechnical
PD0250	Develop 60% Preliminary Design - Bridge	Bridge Design
PD0260	Compile 60% Preliminary Design	Project Manager
PD0270	60% Preliminary Design Geometric Review	Geometrics
PD0280	District Evaluation of Traffic Signals	District Traffic Engineer
PD0290	Conduct 60% Preliminary Design Review - Roads	Road Design
PD0295	Conduct 60% Preliminary Design Review - Bridges	Bridge Design
PD0300	DUS Reviews/Confirms 60% Preliminary Design with	District Utility Representative

Standard Activities		
Activity ID	Activity Description	Functional Responsibility
	Utilities	
PD0310	Environmental Solicitation of Views	Environmental
PD0316	Prepare Work Effort for Property Survey	Location and Survey
PD0318	Execute Supplemental Agreement	Consultant Contracts
PD0320	Furnish Title Work and Perform Property Surveys	Location and Survey
PD0330	Request Updated Titlework	Location and Survey
PD0340	60% Preliminary Design Hyrdraulic Review	Hydraulics
PD0350	Conduct Environmental Studies and Develop Document	Environmental
PD0360	Update Titlework	Location and Survey
PD0370	Decision on Traffic Signal Design	Traffic Engineering and Services
PD0380	Address/Resolve General 60% Prel. Des. Review Comments	Project Manager
PD0390	Develop Preliminary ROW Maps	Location and Survey
PD0410	Submit Environmental Docs for Comments	Environmental
PD0420	Address/Resolve Geometric 60% Prel. Des. Review Comments	Project Manager
PD0430	DUS Distributes Preliminary Plans and Lists to Utilities	District Utility Representative
PD0440	Address/Resolve Hydraulic 60% Prel. Des. Review Comments	Project Manager
PD0450	Address/Resolve Agency Comments	Environmental
PD0480	Distribute Preliminary ROW Taking Lines	Project Manager
PD0490	Agency Approval of Documents	Environmental
PD0500	Develop 90% Preliminary Design - Roads	Road Design
PD0510	Develop 90% Preliminary Design - Bridge	Bridge Design
PD0512	CE Selects VE Team, Team Performs Study and Makes Recom. to CE	Project Manager
PD0520	Verify Topo - USTs, Contamination, Improvements	Real Estate
PD0530	Review 90% Prel. Des. P/H - Roads	Road Design
PD0535	Review 90% Prel. Des. P/H - Bridges	Bridge Design
PD0536	Chief Reviews VE Recommendation	Project Manager
PD0540	Address/Resolve 90% Prel. Des. P/H Bridge Comments	Bridge Design
PD0550	Address/Resolve 90% Prel. Des. P/H Road Comments	Road Design
PD0560	Distribute Plan-In-Hand Doc. for Review	Project Manager
PD0570	Plan-In-Hand Meeting	Project Manager
PD0590	Revise P/H Prel. Des. to Reflect Comments - Roads	Road Design
PD0595	Revise P/H Prel. Des. to Reflect Comments - Bridge	Bridge Design
PD0610	Prepare Fee and Scope Final Plan	Project Manager
PD0620	Prepare Final Plan Supplement	Consultant Contracts
FD0010	Schedule and Prepare for Joint Review Meeting	Real Estate
FD0020	Conduct Joint Review Meeting	Real Estate
FD0030	Final Plans Notice to Proceed	Project Manager

Standard Activities		
Activity ID	Activity Description	Functional Responsibility
FD0040	Develop 30% Final Plans - Roads	Road Design
FD0045	Develop Traffic Control Plans	District Traffic Engineer
FD0050	Develop 30% Final Plans - Bridge	Bridge Design
FD0060	Prepare Final ROW Maps	Location and Survey
FD0070	Prepare ROW Cost Estimate	Real Estate
FD0080	Prepare HQ Utility Cost Estimate	HQ Utilities
FD0090	Prepare Relo Letter and Agreements for Utility Co	District Utility Representative
FD0100	Confirm Required Permits and Agreements List	Project Manager
FD0110	Prepare C/S/I Applications for Required Agreements	Consultant Contracts
FD0112	Prepare Railroad Applications for Required Agreements	Highway/Rail Safety
FD0120	Prepare CE/CG/CZ Applications for Required Permits	Permits
FD0121	Prepare Applications for Required Scenic Stream Permit	Environmental
FD0130	Develop Final Plan to 60% - Roads	Road Design
FD0140	Develop Final Plans to 60% - Bridge	Bridge Design
FD0150	Request Funding for R/W Activities	Real Estate
FD0160	Request & Rec Fed. Auth. of Funds - R/W & Utilities	Project Control
FD0190	Review and Resolve Final ROW Map Issues	Location and Survey
FD0195	Modify ROW Maps to Reflect Final Comments	Location and Survey
FD0200	Utility Company Signs and Returns Project Package	District Utility Representative
FD0210	Transmit Final ROW Maps to Real Estate	Location and Survey
FD0230	Submit CE/CG/CZ Permit Applications	Permits
FD0231	Submit Scenic Stream Permit Application	Environmental
FD0260	Address/Resolve CE/CG/CZ Permit Comments	Permits
FD0261	Address/Resolve Scenic Stream Permit Comments	Environmental
FD0270	Request Appraisals	Real Estate
FD0280	Address/Resolve C/S/I Agreement Comments	Consultant Contracts
FD0282	Address/Resolve Railroad Agreement Comments	Highway/Rail Safety
FD0290	Compile 60% Final Plan	Project Manager
FD0300	Review 60% Final Plan - Bridge	Bridge Design
FD0310	60% Final Plan Hydraulic Review	Hydraulics
FD0320	60% Final Plan Traffic Engineering Review	Traffic Engineering and Services
FD0330	Review 60% Final Plan - Roads	Road Design
FD0340	Prepare Property Valuation	Real Estate
FD0345	60% Final Plan Geotechnical Review	Pavement and Geotechnical
FD0350	Finalize CE/CG/CZ Permits	Permits
FD0351	Finalize Scenic Stream Permit	Environmental
FD0360	Adjust Design for Permit Mitigation	Project Manager
FD0370	Address/Resolve 60% Final Plan Review Comments - Bridge	Bridge Design
FD0400	Address/Resolve 60% Final Plan Review Comments - Roads	Road Design

Standard Activities		
Activity ID	Activity Description	Functional Responsibility
FD0410	Finalize C/S/I Agreements	Consultant Contracts
FD0412	Finalize Railroad Agreements	Highway/Rail Safety
FD0420	Develop Final Bridge Design to 95%	Bridge Design
FD0430	Develop Final Road Design to 95%	Road Design
FD0440	Conduct Relocation Negotiations	Real Estate
FD0450	Conduct Acquisition Negotiations	Real Estate
FD0460	District Forwards Project Package to HQ for Review	District Utility Representative
FD0470	HQ Utility Approval	HQ Utilities
FD0480	Release Letter - Utilities	HQ Utilities
FD0490	Distribute 95% ACP for Review	Project Manager
FD0500	ACP Review Period	Project Manager
FD0510	Address/Resolve ACP Comments	Project Manager
FD0535	Remove Improvements from Right of Way	Real Estate
FD0540	Certify Project R/W Activities Are Complete	Real Estate
FD0550	Develop Final Plans to 100% Complete	Project Manager
FD0560	District Issues Utility Work Orders	District Utility Representative
FD0570	Prepare Final Estimate	Project Manager
FD0575	Develop Final Life Cycle Cost Analysis	Pavement and Geotechnical
FD0580	Develop Construction Proposals to 95% Complete	Contracts and Specifications
FD0590	Signed by Engineering Chief	Project Manager
FD0595	Develop Construction Proposals to 100% Complete	Contracts and Specifications
FD0600	Request & Rec Fed. Auth. Funds - Construction	Project Control
FD0620	Advertise Project	Contracts and Specifications

## Standard Task Templates Report

Activity Code: SPD000

Activity Description: Stage 3 Project Startup

Task Number	Task Description	Weighted Value
1	(PD0002) Compile Project Assessment Data	10
2	(PD0004) Prepare Scope and Fee Package	10
3	(PD0006) Prepare Consultant Advertisement	10
4	(PD0008) Advertise and Select Consultant	5
5	(PD0010) Prepare Original Contract	5
6	(PD0012) Req and Rec Fed Auth of Funds - Cons Eng	5
7	(PD0015) Develop Notice to Proceed	1
8	(PD0020) Assemble Project Management Team	5
9	(PD0030) Conduct Project Kickoff Meeting	4
10	(PD0032) Request Traffic Data	1
11	(PD0034) Develop Traffic Data	5
12	(PD0035) PM Requests Traffic Analysis	1
13	(PD0036) Req PH and Resist and Pvmnt Des	1
14	(PD0037) Perform Preliminary Traffic Analysis	5
15	(PD0040) Prepare and Distribute Predesign Form	1
16	(PD0060) Conduct Predesign Meeting	5
17	(PD0080) Develop Preliminary Pavement Design	5
18	(PD0082) Develop Preliminary LCCA	5
19	(PD0130) Pavement Review Committee Process	5
20	(PD0140) Request Subgrade Soil Survey	1
21	(PD0070) Request Topographic Surveys	5

Activity Code: SPD010C

Activity Description: Topographic Surveying (Consultant)

Task Number	Task Description	Weighted Value
1	Receive Request for Topographic Survey Estimate	1
2	Make Topographic Survey Estimate	1
3	Set Control and Run Traverse	10
4	Submit Closure Sketch for Review	5
5	Review Centerline Closure Sketch	1
6	Receive Acceptance Letter for Closure Sketch	5
7	Collect Topographic Survey Data	69
8	Submit Topographic Data for Review	5
9	Review Topographic Survey Data	1
10	Transmit Topographic Survey Data	1
11	Receive Acceptance Letter for Topographic Data	1

Sort: Activity Code, Ascending

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## Standard Task Templates Report

Activity Code: SPD010I

Activity Description: Topographic Surveying (In-House)

Task Number	Task Description	Weighted Value
1	Receive Topographic Survey Request	1
2	Perform Topographic Survey (PD0090)	80
3	Develop Digital Electronic Survey Package (PD0120)	10
4	Make Topographic and Utility Info Available (PD0150)	10

Activity Code: SPD020

Activity Description: Develop 100% Preliminary Road Design

Task Number	Task Description	Weighted Value
1	(PD0160) Perform Subgrade Soil Survey	5
2	(PD0170) Preliminary Plans Notice to Proceed	1
3	(PD0190) Develop 30% Preliminary Design - Roads	15
4	(PD0200) Coordinate Preliminary Design with Railroads	1
5	(PD0220) Develop 60% Preliminary Design - Roads	25
6	(PD0240) Develop Final Pavement Design	5
7	(PD0260) Compile 60% Preliminary Design	10
8	(PD0270) 60% Preliminary Design Geometric Review	10
9	(PD0280) District Evaluation of Traffic Signals	5
10	(PD0290) Conduct 60% Preliminary Design Review - Roads	10
11	(PD0340) 60% Preliminary Design Hydraulic Review	10
12	(PD0370) Decision on Traffic Signals	5
13	(PD0380) Address/Resolve Gen 60% Prelim Des Rev Comm	10
14	(PD0420) Address/Resolve Geom 60% Prelim Des Rev Comm	5
15	(PD0440) Address/Resolve Hyd 60% Prelim Des Rev Comm	5
16	(PD0480) Distribute Preliminary ROW Taking Lines	10
17	(PD0500) Develop 90% Preliminary Design - Roads	25
18	(PD0512) Chief Eng Selects VE Team, Study & Rec to Chief	1
19	(PD0530) Rev 90% Preliminary Design P-I-H - Roads	5
20	(PD0536) Chief Reviews VE Recommendations	1
21	(PD0550) Address/Resolve 90% Prel Des P-I-H Road Comm	5
22	(PD0560) Distribute Plan-In-Hand Doc for Review	1
23	(PD0570) Plan-In-Hand Meeting	5
43	(PD0590) Revise P/H Prel Des to Reflect Road Comments	5

Sort: Activity Code, Ascending

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## Standard Task Templates Report

Activity Code: SPD030

Activity Description: Develop 100% Preliminary Bridge Design

Task Number	Task Description	Weighted Value
1	Request Hydraulic Analysis	5
2	Perform Hydraulic Analysis	150
3	(PD0180) Develop 30% Preliminary Design - Bridge	200
4	(PD0210) Order Subsurface Investigation for Project	3
5	(PD0230) Furnish All Subsurface Investigation for Project	300
6	(PD0250) Develop 60% Preliminary Design - Bridge	200
7	(PD0295) Conduct 60% Preliminary Design - Bridge	40
8	(PD0340) 60% Preliminary Design Hydraulic Review	30
9	(PD0510) Develop 90% Preliminary Design - Bridge	250
10	(PD0535) Review 90% Preliminary Design P_H - Bridge	70
11	(PD0540) Address/Resolve 90% Prel Des P_H Bridge Comm	50
12	(PD0595) Revise P_H Prel Des To Reflect Bridge Comm	50

Activity Code: SPD040

Activity Description: Environmental Process for Categorical Exclusion

Task Number	Task Description	Weighted Value
1	Review plans and obtain other information	1
2	Solicit views	1
3	Site visit	1
4	Request and obtain Conceptual Stage Relocation Plan	1
5	Wetland Delineation and Finding	2
6	Threatened and endangered species consultation	3
7	Phase 1 ESA	3
8	Noise Study	2
9	Air Study	2
10	Cultural Resources Survey and Section 106 Doc	3
11	Public Involvement	2
12	Prepare Categorical Exclusion Doc	1
13	Submit and revise as necessary to obtain approval	1
14	Distribute approved doc	1

Activity Code: SPD050

Activity Description: District/Utilities Preliminary Design Coordination

**Sort: Activity Code, Ascending**

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## Standard Task Templates Report

Task Number	Task Description	Weighted Value
1	(PD0300) DUS Reviews and Confirms 60% Prel Des w/Utilities	70
2	(PD0430) DUS Distributes Prel Plans & Lists to Utilities	30

Activity Code: SPD060

Activity Description: Perform Property Survey Work

Task Number	Task Description	Weighted Value
1	Receive Request for Property Survey and Title Request	1
2	Make Estimate for Property Survey and Title Report	1
3	Obtain Title Information	14
4	Collect Field Property Survey Data	70
5	Process Property Survey Field Data	14

Activity Code: SPD070

Activity Description: Develop Preliminary and Final ROW Maps

Task Number	Task Description	Weighted Value
1	Receive Request for R/W Map Estimate or Preliminary Plans	1
2	Make Estimate for R/W Map and Title Work Updates	4
3	Update Title Work (If Necessary)	7
4	(PD0390) Develop Preliminary (60%) R/W Maps	45
5	Submit Preliminary (60%) R/W Maps for JPR	2
6	Review and Transmit Preliminary (60%) R/W Maps	1
7	Attend JPR Meeting	4
8	Prepare Final R/W Maps and compute Parcel Descriptions	22
9	Submit Final R/W Review Prints	2
10	Review Final R/W Review Prints	1
11	(FD0190) Review and resolve Final R/W Map Issues	11
12	Submit Final R/W Maps (Mylar Prints)	1
13	Transmit Final R/W Maps, Title Reports, Upload Parcel Desc	1

Activity Code: SPD080

Activity Description: Setup For Final Plan Work

Task Number	Task Description	Weighted Value
1	(PD0610) Prepare Scope Final Plan	1
2	Prepare Work Hours for Final Plan	1
3	Prepare Compensation Package for Final Plans	1
4	Prepare and Execute Final Plan Supplement	1

Sort: Activity Code, Ascending

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## Standard Task Templates Report

Activity Code: SFD000

Activity Description: Schedule and Conduct Joint Review Meeting

Task Number	Task Description	Weighted Value
1	Schedule and Prepare for Joint Review Meeting (FD0010)	5
2	Prepare ROW Cost Estimate (FD0070)	35
3	Prepare HQ Utility Cost Estimate (FD0080)	15
4	Conduct Joint Review Meeting (FD0020)	20
5	Request State Funding for ROW and Utilities Activities	10
6	Req Fed Auth of Funds - ROW and Utilities	15

Activity Code: SFD020

Activity Description: Develop 95% Final Road Design

Task Number	Task Description	Weighted Value
1	Develop 30% Final Plans - Roads (FD0040)	15
2	Develop Traffic Control Plans (FD0045)	10
3	Develop Final Plans to 60% - Roads (FD0130)	25
4	Compile 60% Final Plan (FD0290)	10
5	60% Final Plan Hydraulic Review (FD0310)	10
6	60% Final Plan Traffic Engineering Review (FD0320)	10
7	Review 60% Final Plan - Road (FD0330)	5
8	60% Final Plan Geotechnical Review (FD0345)	10
9	Adjust Design for Permit Mitigation (FD0360)	5
10	Address/Resolve 60% Final Plan Comm - Road (FD0400)	10
11	Develop Final Road Design to 95% (FD0430)	30
12	Prepare C/S/I Apps for Required Agreements (FD0110)	10
13	Address/Resolve C/S/I Agreement Comments (FD0280)	5
14	Finalize C/S/I Agreements (FD0410)	10

Activity Code: SFD030

Activity Description: Develop 95% Final Bridge Design

Task Number	Task Description	Weighted Value
1	Develop 30% Final Plans - Bridge (FD0050)	30
2	Develop Final Plan to 60% - Bridge (FD140)	30
3	Review 60% Final Plan - Bridge (FD0300)	5
4	60% Final Plan Hydraulic Review (FD0310)	5
5	Address/Resolve 60% Final Plan Rev Comm - Bridge (FD0370)	2
6	Develop Final Bridge Design to 95% (FD0420)	30

Sort: Activity Code, Ascending

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## Standard Task Templates Report

Activity Code: SFD040

Activity Description: Appraise and Acquire Right of Way

Task Number	Task Description	Weighted Value
1	Request Appraisals (FD0270)	5
2	Prepare Property Valuations (FD0340)	25
3	Conduct Relocation Negotiations (FD0440)	25
4	Conduct Acquisition Negotiations (FD0450)	25
5	Remove Improvements from Right of Way (FD0535)	15
6	Certify Project ROW Activities Are Complete (FD0540)	5

Activity Code: SFD050

Activity Description: DUS Coordinate Required Utility Agreements

Task Number	Task Description	Weighted Value
1	Prep Utility Agreements (FD0090)	20
2	Utility Company Signs and Returns Project Pkg (FD0200)	60
3	District Forwards Project Pkg to HQ for Review (FD0460)	20

Activity Code: SFD055

Activity Description: Approval of Utility Agreements

Task Number	Task Description	Weighted Value
1	HQ Utility Approval (FD0470)	80
2	Release Letter - Utilities (FD0480)	20

Activity Code: SFD060

Activity Description: Obtain Required Permits/Agreements

Task Number	Task Description	Weighted Value
1	Confirm Req Permits and Agreements List (FD0100)	5
2	Prepare Railroad Applications for Req Agreements (FD0112)	15
3	Address/Resolve Railroad Agreement COMments (FD0282)	5
4	Finalize Railroad Agreements (FD0412)	5
5	Prepare CE/CG/CZ Apps for Required Permits (FD0120)	5
6	Submit CE/CG/CZ Apps for Required Permits (FD0230)	5

**Sort: Activity Code, Ascending**

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## Standard Task Templates Report

7	Address/Resolve CE/CTG/CZ Permit Comments (FD0260)	20
8	Finalize CE/CG/CZ Permits (FD0350)	5
9	Prepare C/S/I Apps for Required Agreements (FD0110)	15
10	Address/Resolve C/S/I Agreement Commetns (FD0280)	10
11	Finalize C/S/I Agreements (FD0410)	5

Activity Code: SFD080

Activity Description: Develop 100% Final Design Plans & Estimates

Task Number	Task Description	Weighted Value
1	Distribute 95% ACP for Review (FD0490)	5
2	ACP Review Period (FD0500)	25
3	Address/Resolve ACP Comments (FD00510)	20
4	Develop Final Plans to 100% Complete (FD0550)	20
5	Prepare Final Estimates (FD0570)	10
6	NPDES Permit	10
7	Signed By Chief Engineer (FD0590)	5
8	Transmit Final Plans to General Files	5

Activity Code: SFD090

Activity Description: Develop Construction Proposals

Task Number	Task Description	Weighted Value
1	Develop Construction Proposals to 95% Complete (FD0580)	80
2	Develop Construction Proposals to 100% Complete (FD0595)	20

Sort: Activity Code, Ascending

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## **8 Stage 4 Standard Operating Procedure**

### **8.1 Purpose**

The purpose of Stage 4 (Letting Preparation) is to provide the department and our customers with an orderly, predictable mix and flow of projects that have completed Stage 3 (Final Design Process) and advanced to the beginning of Stage 5 (Construction Process). Stage 4 processes will be used on all headquarters-let projects including TIMED projects. Construction/maintenance projects let in the districts will not be subject to Stage 4 processes, but information from these projects will be taken into consideration during Stage 4.

The anticipated benefits of Stage 4 are typical of benefits inherent to stable, uniform, and predictable processes.

- DOTD can announce with greater confidence when a project will be let and construction will begin, make more informed/accurate budget decisions, and reduce adverse effects of construction on the public and local business.
- Public officials can have more confidence in our letting and construction schedules, thus enabling them to plan better and react accordingly.
- Contractors will have a greater planning horizon, and, as a result, conduct their activities with greater certainty.
- A reduction in “last minute” changes during the advertising period will result in better bids and fewer mistakes by contractors, i.e. reduced project costs and reduced conflict/litigation.
- The public can be better informed, and therefore plan for and adjust to temporary inconveniences.

### **8.2 Process**

The Stage 4 process is graphically presented in figure 8-1 (see page 8-8). It begins in July prior to the year of construction and examines projects with delivery dates set during that state fiscal year. These projects will be examined, prioritized, and scheduled for letting during the following fiscal year within budgetary confines. The process will repeat itself

each year, beginning each July. Completed Stage 3 projects that do not, for whatever reason(s), get let in the year that they were initially scheduled may be inserted in the next year's schedule or may be placed back into the pool of Stage 3 projects awaiting prioritization. Project authorization (federal), advertisement, letting, award, and contract execution processes remain unchanged.

**Step 1:** As the first step, in July of each year the districts will be given a listing of projects with project delivery date that is to occur that state fiscal year within the respective district. The districts will then prioritize each project within each budget partition sub-category, i.e., they must rank one capacity project over another capacity project or one non-interstate preservation project over the other non-interstate preservation projects. This step provides for a mix of project types while adding a degree of priority.

**Step 2:** After the sub-category prioritization, the districts will then prioritize/rank all projects within their district. This step provides for input of district-wide priority while maintaining the mix of project types.

The results of these first two steps will produce a ranking of projects as illustrated in the following example:

PROJECT TYPE	PROJECTS	SUB-CATEGORY RANK	DISTRICT RANK
pp/non-inter	A	1	5
	B	2	6
	C	3	7
Pp/inter	D	1	1
	E	2	2
Cap	F	1	3
Rest	G	1	11
Off-bridge	H	1	4
	I	2	8
	J	3	9
	K	4	10

## **ORDERED RANK**

1. D 1-1
2. F 1-3
3. H 1-4
4. A 1-5
5. G 1-11
6. E 2-2
7. B 2-6
8. I 2-8
9. C 3-7
10. J 3-9
11. K 4-10

**Step 3:** Next, each district will submit their ordered ranking of projects to Project Control in mid-September. Project Control will combine the districts' ordered ranking of projects to formulate a state-wide ordered list of projects. In general, Project Control will take each top ranked project from each district and place it near the top of the statewide list. Each of the districts second-ranked projects will come next, third-ranked projects next, continuing down the districts' ordered rankings until all projects are included. This step will provide for a geographic distribution of projects with a degree of both district and statewide priority attached.

**Step 4:** Project Control then confers with the Executive Committee to identify significant projects that should be moved towards the top of the statewide ranking. This step allows for flexibility in the proposed program.

**Step 5:** The next step requires that Project Control examine the statewide list to determine preferred letting dates based upon socio-economic factors such as the construction effects on traffic, traffic management, schools, hospitals, emergency vehicles, business concerns, holiday travel, and special events in the area. Factors that must be taken into consideration are the anticipated work order date, the character and type of construction, the length of the contract, traffic and opportunities for traffic management and re-routing, nature, and the extent of other influencing factors in the area. In some cases, a shift in letting date will significantly reduce negative socio-economic impacts. However, in most cases, the potential problems can not be mitigated by selecting a particular letting date. In these situations, Project Control may be able to use the

information gained during its project evaluation to recommend to design, the districts and/or the public information office other avenues to mitigate some of the detrimental effects of the construction on the public and the business concerns in the area.

**Step 6:** Based upon the analysis performed in the previous step, Project Control develops a draft ranking of projects with preferred letting dates where appropriate.

**Steps 7 & 8:** In consultation with the program finance committee, Project Control will select project letting dates based upon the concept of equally spreading the dollar value of the capital outlay program over the entire year. Leveling the program will assist contractors in their pursuit of work and should increase competition.

The project letting dates selected by Project Control will be given to the Chief Engineer for his review and approval. This step must be completed in October of each year to allow for development and approval of the next year's program by the legislature and the development and approval of the State Transportation Improvement Program (STIP).

**Step 9:** Finally, Project Control will advertise and let projects according to the approved project letting date. Authorization, award, DBE matters, and contract matters will continue and do not change.

At this point, the project is turned over to Stage 5 with the issuance of the "Notice of Contract Execution."

Letting dates for projects that are postponed, withdrawn or re-bid will be, with the Chief Engineer's approval, assigned/inserted into the next available letting or may be returned to Stage 4/Step 5 as necessary.



### 8.3 Responsibility Matrix

STEP	DISTRICT	PROJECT CONTROL	OTHERS
1.Priorities by category	X	Assist	
2.Priorities by district	X	Assist	
3.Statewide ranking		X	
4.Identify hot projects		Assist	X-DOTD Administration
5.Socio-economic	Assist	X	Assist-Adm/Area Officials
6.Draft ranking		X	
7.Approval of ranking			X-PFC/Chief Engineer
8.Leveling/Letting dates		X	
9.Auth/ADD/Let/Award, etc.		X	C&S/FHWA

### 8.4 Checklist

- District completes ranking by subcategory
- District completes ranking by district-wide priority
- All district rankings submitted to Project Control
- Project Control combines/completes statewide ranking
- Executive Committee identifies significant projects
- Project Control adjusts statewide ranking based upon Executive Committee's identification of significant projects
- Project Control examines each project on list to determine socio-economic effects (see note)
- Project Control adjusts list to optimize/minimize impacts
- Project Control recommends remedial measures to Design/Contracts & Specifications
- Project Control selects letting dates based upon level dollar volume per letting
- Project Control presents proposed list/letting dates to PFC for review; adjusts as necessary
- Project Control submits proposed letting list/dates to Chief Engineer for approval and adjusts as necessary
- Project Control publishes letting list for next 6 months (6-month look ahead) on the internet
- Contracts & Specifications updates proposals based upon approved letting dates

- Contracts & Specifications has proposals reproduced
- Project Control identifies exact funding source of project
- Project Control verifies through “LETS” that all required permits/agreements/etc. are in place
- Project Control gathers required data and requests federal authorization on fed-aid projects; authorization is requested based upon letting dates and can continue down the letting list (without pause) until completed
- Project Control advertises projects
- Project Control takes orders, distributes proposals
- Business Services distributes plans
- Project Control distributes addenda
- Project Control opens bids
- Project Control evaluates bids and enters bid data into “BIDS” system
- Project Control conducts bid review
- Project Control prepares recommendations for award to Chief Engineer
- Project Control requests concurrence in award from FHWA when required
- Project Control requests concurrence in award from sponsor when necessary
- Project Control issues apparent low bidder letter
- Project Control requests and modifies federal funding if necessary
- Project Control encumbers state and federal monies against project and vendor
- Compliance calls low bidder and writes letter on DBE projects
- Compliance reviews and approves DBE submittal
- Contracts & Specifications prepares contracts
- Project Control awards contracts
- Contractor executes contract and supplies bonding and insurance
- Project Control checks contracts, bonds, and insurance; if not satisfactory, corresponds with contractor/surety/insurance agent to correct
- Project Control issues “Notice of Contract Execution” to district/contractor
- Project Control adjusts monies throughout life of contract
- Project Control zero’s project funds, closes project after final estimate is paid

*Note: The process to accomplish this task has not been completely defined. The intention is to mitigate spin-off problems related to letting/work order date and construction of a particular project. Project Control will need to determine whether a project will severely impact business/civic interests and local traffic. Project scope, construction procedures,*

*traffic control plans, and anticipated project duration must be coordinated with area business/civic needs and other construction in the area. This task will require close coordination with district personnel, local authorities, and industry to determine and mitigate potential conflicts.*

## **8.5 Project Finance Committee (PFC) Duties in Stage 4**

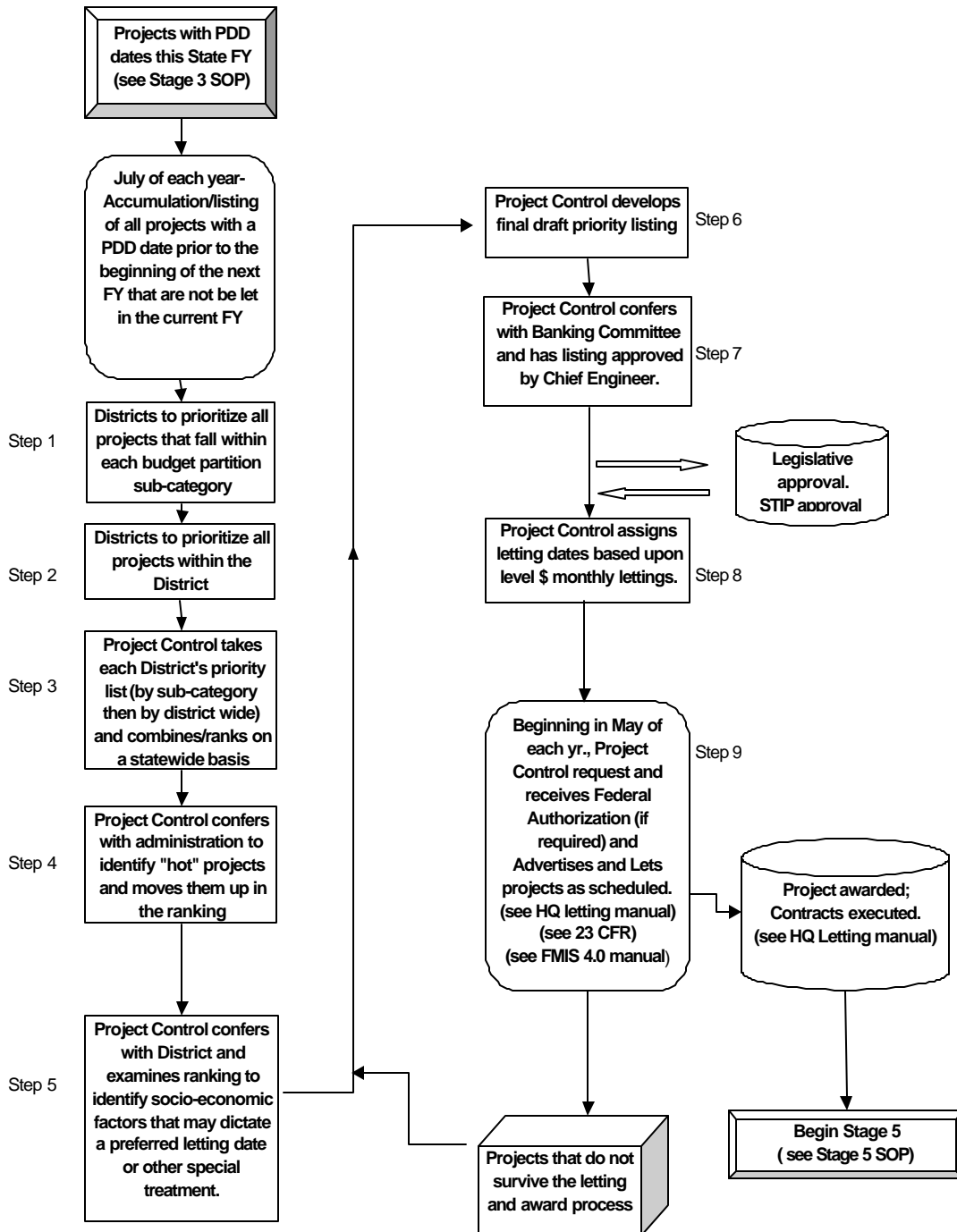
- The PFC provides final project financing plan to Stage 4 committee (and Project Control).
- The PFC coordinates with the scheduler (Stage 4 committee) and adjusts cash flow plan for the project.
- The PFC receives and reviews monthly letting results (from Project Control or Stage 4 committee). After Chief Engineer receives recommendations from bid review committee and decides to award, Project Control will adjust project construction budget amounts for low bid amount, contingencies, and CIA.
- The PFC adjusts program budgets accordingly and provides management with the cash balance report (the checkbook balance).

## **8.6 Deliverables**

The following are the primary goals of Stage 4:

- During the fiscal year (FY), let and award an optimized mix of project types reflective of the budget partition's sub-categories and funding levels; an optimized geographical mix of projects; and projects reflective of local and statewide priorities.
- During the FY, let and award projects in a manner that reduces negative socio-economic impacts to the traveling public and Louisiana business and industry.
- Level the monthly letting schedule based upon dollar value let.

**PROJECT DELIVERY STAGE FOUR**  
STANDARD OPERATING PROCEDURES



**Figure 8-1**

## **9 Stage 5 Standard Operating Procedure**

### **9.1 Purpose**

The primary purpose of Stage 5 (Construction) is to administer a construction project from receiving the approved contract from Stage 4 through the final acceptance of the constructed project and the delivery of the project to the operations staff (Stage 6).

### **9.2 Process**

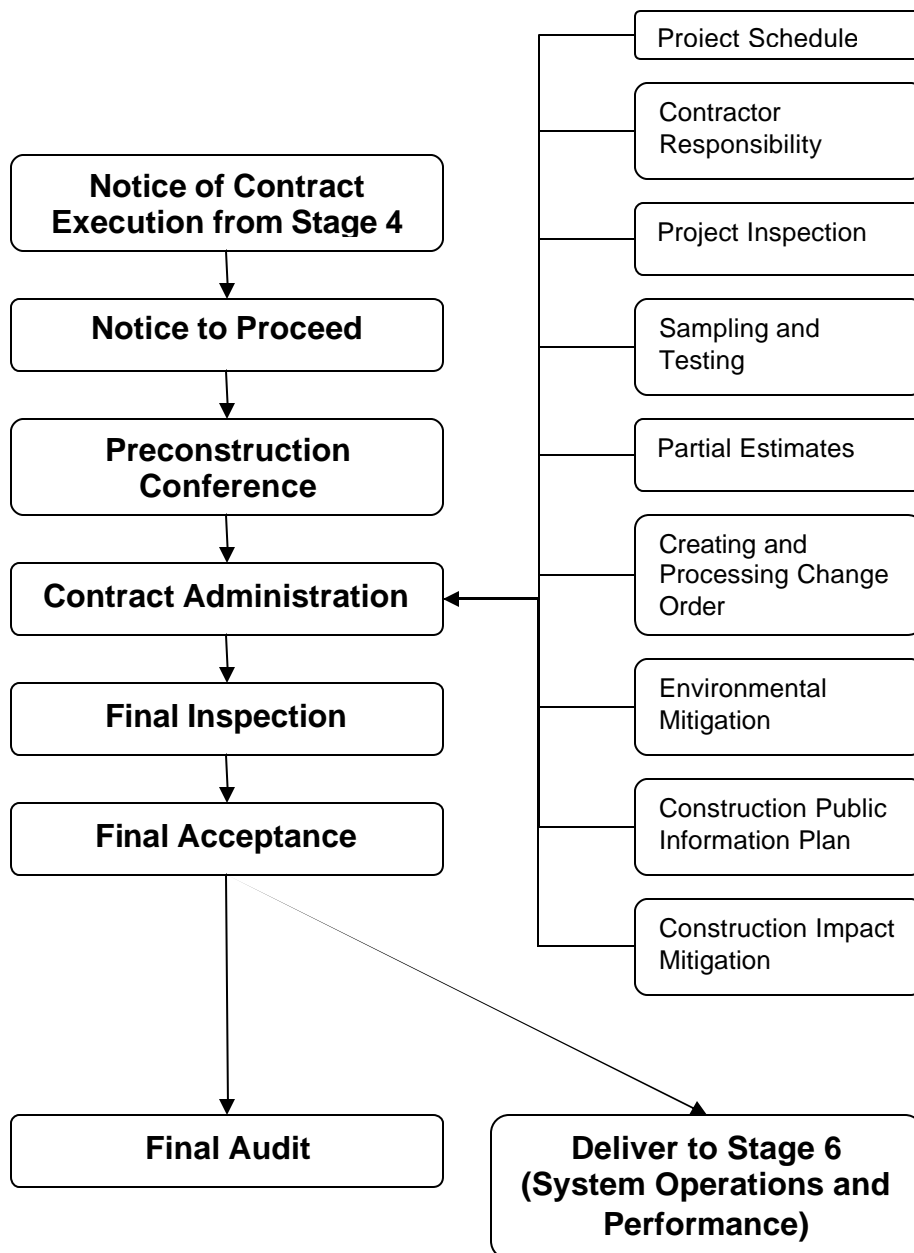
The process described below and shown in the construction process flowchart (figure 9-1, see next page) provides an overview of the steps involved in constructing a DOTD project.

#### **9.2.1 Notice to Proceed**

The department issues the “Notice to Proceed” directing the contractor to begin work or begin the activities covered under the contract.

- **Notice Issued** – The Department will issue the contractor a Notice to Proceed no later than 60 calendar days after the Notice of Contract Execution unless written consent of the contractor has been obtained. Notice issued by the District will be issued by the District Administrator or his designated representative within 15 calendar days after the notice of contract execution. If circumstances dictate that the notice needs to be delayed beyond the 15 calendar days, the District Administrator shall provide timely written justification and request approval of the delay through the Chief Engineer. Subsection 103.08 of the DOTD Standard Specifications and EDSM III.1.1.30 establishes the procedure and conditions by which the department issues the “Notice to Proceed” and establishes the requirements and a uniform policy for the notice as well as other instruments directing the contractor to begin work or begin the activities covered under the contract.
- **Failure to Begin Work** – A contractor will be placed in default for failing to begin work within 10 days of the “Notice to Proceed” date. Construction Memorandum No. 384 and DOTD Standard Specifications 108.09 establish a uniform policy

and authorization to be used when placing a contractor in default for failing to begin work.



**Figure 9-1**

### **9.2.2 Preconstruction Conference**

A preconstruction conference will be held on all projects. The conference will be held prior to the beginning of construction. The conferences should be scheduled sufficiently

in advance to permit the attendance of all parties concerned. EDSM III.1.1.7 establishes a uniform policy for preconstruction conferences.

### **9.2.3 Contract Administration**

#### **Project Schedule**

The contractor is required to submit a construction progress schedule to the project engineer for approval. The provisions and policies described below allow for the revision of a previously approved construction progress schedule and define the process of charging contract time, reporting contract time, placing contractors in default, and disqualifying contractors.

- Construction Progress Schedule – DOTD Standard Specification 108.03 and Construction Memoranda No. 245 and No. 246 establish the guidelines and procedures for the contractor to submit a construction progress schedule to the project engineer for approval. They also include guidelines for completing the schedule and clarify several issues related to construction progress schedules.
- Revised Construction Progress Schedules - Construction Memorandum No. 240 establishes a uniform policy to be used when it is necessary or desirable that a previously approved construction progress schedule be revised.
- Contract Time - EDSM III.1.1.19 describes the procedures for charging contract time, reporting contract time, placing contractors in default and disqualifying contractors.
- Commentary on Contract Time - EDSM III.1.1.24 familiarizes construction personnel and other interested parties with the portions of the General Provisions of the Louisiana Standard Specifications for Roads and Bridges that deal with contract time.

#### **Contractor Responsibility**

These policies detail the contractor's responsibility for the quality, prosecution, and progress of work.

- Contractor's Responsibility for Work – DOTD Standard Specification 107.19 requires the contractor to be responsible for and take precautions to prevent damage to work and the project until final acceptance.
- Prosecution and Progress – DOTD Standard Specification 108 establishes procedures and guidelines for subletting, commencement of work, construction

progress schedule, prosecution of work, limitations of operations, determination and extension of contract time, failure to complete on time, and default and termination of contract.

### **Project Inspection**

It is the duty and authority of project engineers to administer contracts on DOTD construction projects. Along with their inspectors, they inspect all work on or related to construction projects and are authorized to accept or reject work performed by the contractor..

- Authority and Duty of Project Engineer – DOTD Standard Specification 105.09 establishes the authority and duty of project engineers to administer contracts on construction projects.
- Authority and Duty of the Inspector – DOTD Standard Specification 105.10 authorizes the department's inspectors to inspect all work on or related to construction projects and establishes the authority for the inspection of work and materials.
- Certified Inspectors – EDSM III.1.26 and Construction Memorandum No. 70 and No. 307 list the five areas of DOTD certifications and require that the DOTD personnel holding valid certifications be physically present on the job whenever construction activities are in progress and clarify the training requirements for office personnel in the project engineer's office.
- Inspection by other than DOTD Personnel on Federal Aid Projects - EDSM III.1.1.21 establishes a uniform policy for inspection and acceptance of projects financed with federal and/or state aid and administrated by DOTD where construction is supervised by municipalities, parishes, or other governing bodies or consultants.

### **Sampling and Testing**

The sampling and testing procedures for quality assurance of all materials used in a DOTD project must be authorized. Guidelines for the acceptance of materials, the documentation of material quality on construction projects, and the examination of independent assurance samples and tests are discussed below.

- Control of Materials –DOTD Standard Specification 106 establishes procedures and guidelines for the acceptance of materials; i.e., source of supply and quality requirements, acceptance samples and tests, certificates, contractor quality



control, plant inspection, field laboratory, handling materials, unacceptable materials, Department-furnished material, etc.

- Material Quality Assurance Documentation – EDSM III.5.1.2 describes the minimum requirements for documentation of material quality on construction projects.
- DOTD Record Tests – EDSM V.2.2.2 provides for the uniform policy of taking independent assurance samples and tests on DOTD projects where federal highway funding is not involved.
- Project Sampling and Testing Summary - Construction Memorandum No. 239, Sampling and Testing Form 2059 requires that the project engineer either submit a Final Form 2059 with supporting documentation or a letter stating that no sampling and testing was required on a construction project prior to the final estimate being paid.

### **Partial Estimates**

Procedures and guidelines are established for the measurement and payment of work on construction projects. Other policies establish procedures for allowing overruns on partial estimates, determining the due dates on partial estimates, and assessing stipulated damages.

- Measurement & Payment – DOTD Standard Specification 109 establishes procedures and guidelines for the measurement and payment of work on construction projects. This includes compensation for altered quantities, compensation for alterations of the contract, partial payments, payment for stockpiled or stored material and acceptance and final payment.
- Partial Estimate Overruns - EDSM III.1.1.20 establishes procedures for allowing overruns on Partial Estimates.
- Due Dates on Partial Estimates - EDSM III.4.1.3 establishes a uniform policy for determining the due dates on partial estimates.
- Preparing and Processing Estimates - EDSM III.4.1.1 streamlines the preparation and checking of partial and final estimates through consolidation, revision or elimination of unnecessary documentation or reporting as well as computations that are repetitious in order to expedite processing.
- Partial Estimates Delay - Construction Memorandum No. 304 establishes a procedure for project engineers to report to the construction section that a partial estimate is being delayed.

- Assessment of Stipulated Damages - Construction Memorandum No. 412 establishes a uniform procedure for assessing stipulated damages, as they occur on monthly partial estimates.

### **Creating and Processing Change Order**

DOTD is authorized to order alterations in quantities and plans. However, a contractor can file a claim for additional compensation due for work, material, delays, inefficiencies, disruptions, etc. Cost savings due to a value engineering proposal can be shared with the contractor.

The project engineer has procedures and guidelines for the measurement and payment of work on construction projects, revisions in contract plans and specifications, work done on a force account basis, contract disputes, and the tracking by category of change orders.

- Alteration of the Contract – DOTD Standard Specification 104.02 establishes the authority for DOTD to order alterations in quantities and plans, as deemed necessary, to complete the work.
- Claims for Additional Compensation – DOTD Standard Specification 105.18 establishes the procedure by which a contractor can file a claim for additional compensation due for work, material, delays, inefficiencies, disruptions, etc.
- Value Engineering Proposals - DOTD Standard Specifications 105.19 establishes the provision to share with the contractor the cost savings generated on a contract as a result of a Value Engineering proposal, offered by the contractor and approved by the department. It also provides the guidelines and procedures for the VE proposal and the approval process.
- Measurement & Payment – DOTD Standard Specification 109 establishes procedures and guidelines for the measurement and payment of work on construction projects including compensation for altered quantities, compensation for alterations of the contract, eliminated items, partial payments, payment for stockpiled or stored material and acceptance and final payment.
- Changing Contract Plans and Specifications - EDSM III.1.1.1 establishes a uniform policy for revisions in contract plans and specifications.
- Force Account Work - EDSM III.1.1.15 establishes a procedure for doing work on a force account basis.
- Contract Disputes - EDSM III.1.1.28 establishes the procedure to be followed in the event of contract dispute.

- Processing of Change Orders - Construction Memorandum No. 208 expedites the processing of change orders by establishing some guidelines to follow when preparing these documents.
- Minor Changes Orders- Construction Memorandum No. 264 establishes a procedure for the processing of minor change orders to be approved by the District Administrator.
- Federal-Aid Changes Orders - Construction Memorandum No. 287 revises the processing plan change policy for processing change orders on federal-aid projects.
- Change Order Data Sheet - Construction Memorandum No. 331 establishes a uniform policy for the use of the plan change data sheet.
- Change Order Tracking - Construction Memorandum No. 415 provides for the use of the Change Order Reason Code Chart for the long term tracking of plan changes by cause.

### **Environmental Mitigation**

According to DOTD Standard Specification 107.14, the department must handle environmental issues encountered on construction projects using the DOTD procedures and guidelines, as well as federal, state, and local laws and regulations controlling pollution of the environment, including air, water, and noise.

The scope of the Environmental Mitigation is to provide an overview of the most common environmental issues that are encountered on construction projects and the procedures and guidelines for addressing those matters.

### ***Underground Storage Tanks***

- Construction Memorandum No. 273 instructs project engineers to contact the Central Laboratory in a situation where it will be necessary to overrun the plan quantities for the excavation and aeration of contaminated materials from leaking gasoline tanks.
- DOTD Standard Specification 202.02 establishes guidelines and procedures for handling underground fuel tanks, contaminated soils, and contaminated fluids. It also requires the use of a DEQ approved contractor to do the work and that all tanks shall be registered with DEQ by the Materials and Testing Section.
- DOTD Secretary's PPM No. 48 establishes guidelines and policy regarding underground storage tanks and contaminated sites. The policy is divided into four

categories or phases of activity; i.e., pre-design, design, acquisition, and construction.

### ***Sewer Effluent***

- Construction Memorandum No. 294 establishes a policy that no sewerage system can be connected to DOTD enclosed drainage systems; i.e., to completely isolate DOTD subsurface drainage system from sewer systems.
- EDSM I.1.1.6 establishes the DOTD policy on control of sewer effluent discharge onto DOTD rights-of-way and applies to all new construction and reconstruction projects as well as existing roadways.

### ***Trees***

- EDSM.I.1.1.21 establishes a general policy governing the treatment of significant trees by the department within the highway right-of-way, zone of construction, or operational influence.
- DOTD Standard Specification 201 establishes general construction requirements for the clearing and grubbing of the DOTD right-of-way on construction projects. Also, tasks the engineer with designating which trees will be removed and directs the contractor to repair damaged trees, which are to remain.

### ***Archeological***

- Construction Memorandum No. 353 emphasizes DOTD Standard Specification 107.27, which requires the contractor to cease operations in the area when archaeological or historical items are encountered.
- DOTD Standard Specification 107.27 establishes procedures for the engineer to use if the contractor encounters cultural artifacts or archaeological or historical sites; i.e., operations will be discontinued and the engineer will contact the proper authorities in order that an appropriate assessment may be made.
- EDSM III.1.1.22 restates the procedure for the inspection and evaluation of borrow pit and much disposal areas for cultural artifacts, archaeological and historical sites and the reporting of the results of the inspection and evaluation.

### **Construction Public Information Plan**

Effective communication is essential to the overall success of any major construction project. The goal of such communication is to provide timely and accurate information to motorists, emergency services personnel, business owners, landowners, public officials, commercial truck operators, the media and all others who may be impacted by

the construction. Complaints on construction projects will usually drop if the stakeholders believe they are kept well informed of the project's schedule, delays, progress, alternate routes, etc. The information must be routinely updated since inaccurate or untimely information will inevitably result in public mistrust. Therefore, prior to the onset of a construction project, a written public information plan will be developed by the assigned public affairs officer, the local district representative, the contractor and any other involved DOTD personnel.

The plan will consist of the following elements:

1. Assessment of project's impact, based on project length, duration, Average Daily Traffic data, urban/rural location, hours of operation, time of year, local events, businesses on route, critical access to hospitals, emergency service providers, etc.
2. Determination of **need, individual responsibility and schedule** for the following elements of the project's communication plan:
  - development of the media contact list for this project; verification of telephone, fax and email addresses; determination of how individual media members prefer to receive press releases/project updates; designation of authorized media representative(s); determination of whether public service announcements or work zone campaigns are feasible/effective for particular project
  - development of project fact sheet for all DOTD personnel to use in providing consistent message, same information to all inquiries; establishment of fact sheet maintenance/update/distribution responsibilities (provision of access via intranet or other means)
  - development and distribution of initial project notification to media, affected businesses and residents, adjacent landowners, general public, local/state officials, law enforcement, emergency services offices, public transit providers, schools and school bus transportation, DOTD Truck Permits, etc.
  - development and distribution of letters or flyers regarding upcoming project (construction schedule, anticipated impacts, contact names and telephone numbers of construction engineer/contractor/project engineer, etc., web site address if applicable) to affected residents, businesses, public libraries, local restaurants, etc; or development of schedule for individual or group meetings with affected businesses/ residents/ organizations

- determination as to use of on-the-road advisories such as pre-project message boards indicating when project will start; Highway Advisory Radio; signed detours/alternate routes, etc.; timely maintenance/removal of signs when no longer applicable/necessary
- timing of regular updates to media by designated DOTD personnel through press releases; timing of regular updates to affected residents/businesses; timing of mandatory progress reports by contractor indicating project status, work completed, any changes in work schedule, estimated completion date, etc.
- periodic appearances by selected DOTD official on local morning TV shows, radio interviews, etc.
- public/community briefings at meetings of local organizations such as Rotary Club, Chamber of Commerce, parish or city council meetings, etc.

3. Media interactions must comply with Secretary's PPM No. 6; only DOTD authorized personnel may provide information to the media. As directed in the PPM, the HQ Public Affairs Office must also be notified of media requests for information about agency policy, controversial issues, or potential "news problems." District administrators/section heads are responsible for ensuring that persons authorized to interact with media possess and are familiar with the referenced PPM and the "Media Relations" guide issued by HQ Public Affairs and clearly understand the extent of their individual authorization, i.e., provide factual information on project, etc.

4. Project notifications to sheriffs, parish presidents, fire chiefs and state legislators must comply with Act 103 of the 2003 Legislature, as directed by memo dated August 7, 2003, from Gordon Nelson, Assistant Secretary, Office of Operations.

5. Prior to project completion, the district administrator will determine local/State officials' interest in conducting a ribbon-cutting ceremony and advise HQ Public Affairs Office of such at least four weeks in advance of anticipated date of event. If an event is scheduled, HQ Public Affairs will coordinate the ceremony and issue a media advisory and press release on the event.

### **Construction Impact Mitigation**

The Construction Impact Mitigation noted below is based on the future projects as the stages are completed and the "bin" of projects is ready for construction. This section will

be broken down into construction funding, construction time, milestones and traffic delays.

## **1. Construction Funding**

- a. Change orders, formerly called plan changes, are coded based on reasons required per the Change Order Reason(s) Code Chart (see page 15). The chart is broken down into six categories: 1) Design Errors or Omissions, 2) Differing Site Conditions, 3) La DOTD Convenience, 4) Third Party Accommodations, 5) Contractor Convenience, and 6) Untimely ROW/Utilities.
- b. Change Orders that fall into categories 1, 2, and 6 are conditions that must be corrected either due to errors, site conditions or safety. These change orders will be noted to the Project Finance Committee immediately since they will normally increase the cost of the project.
- c. Change Orders that fall into categories 3, 4, or 5 can be reviewed before commitment of funds. These change orders will normally involve requests that could either increase or decrease construction cost. They will not be noted to the Project Finance Committee until after the approved funding has been overrun. At present the plan change data sheet generated by the project engineer from ESTI (Construction Estimate System) shows the amount of funding left on a project. This form will be modified to notify the Project Finance Committee when the project begins to show an overrun.

## **2. Construction Time**

- a. Projects are let with several different types of contract times: working day, calendar day, and with A+B calendar day. Cost plus time (A+B) bidding procedures and contract time on a calendar day basis will be used whenever practical, including but not limited to urban system projects and bridge replacement projects for both on-state-system and off-state-system roads. The maximum allowable contract time will be specified in the project specifications. A+B bidding procedures will not be used on:
  1. Non-interstate pavement preservation projects and typical contract maintenance projects will be let as working day projects. These projects

are simple in nature, allowing accurate contract time determination by the department. A large portion of these projects require utility relocation which may not be relocated prior to the contractor beginning work. Working day projects allow easy suspension of contract time when utility conflicts are encountered.

2. Enhancement projects will be let as working day projects. These projects typically do not greatly impact traffic and may be contracted to smaller contractors. If an adverse impact to traffic is predicated, A + B bidding procedures and/or calendar day contract time will be considered.
  3. Clearing and grubbing projects will be let as calendar day projects. These projects are simplistic in nature, allowing accurate contract determination by the department.
- b. Calendar day projects will have a list of anticipated monthly holidays and probable rain days. For A+B projects, contractors will include these “lost days” in their “B” bid. Contractors can request additional time if the actual adverse wet days exceed the anticipated rain days in the contract at the conclusion of the project. Contracts of this nature will have an estimated completion date that can be tracked monthly.
- c. A+B projects are usually high profile projects with large traffic counts, and incentives and disincentives. Making the contractor bid the number of days based on his resources, phasing operations, and work load will generally produce a tight timetable. The department will set forth strict and precise specifications concerning the desired work hours, lane restrictions, and lane closures on these types of projects. These projects usually require a Critical Path Method (CPM) updated monthly showing any lost days. It is extremely important for the department to be sure all utilities, right-of-way, and any other site conditions that may impede the contractor, are addressed before letting. The completion dates for these types of projects are easy to track. Additional days can be noted to the “Scheduler” (Stage 4) as the project progresses, based on the CPM updates, if the completion date is being pushed back.

In all instances, change orders will be required to add days to any contract. The estimated completion date used by the different methods would adjust the completion



date base on the type of contract. This information could be included in the change order and given to the “Scheduler” so as to track projects scheduled to be let.

### **3. Milestones**

All calendar day projects will require a milestone schedule. The milestone schedule will include starting date, completion date, lane closure and re-openings for the project duration, and other pertinent events determined during the project development process. The contractor will adjust milestone dates as needed and issue new milestone dates monthly. Milestone adjustments changing the original project completion date more than 30 days will be reported to the Assistant Secretary for Operations.

### **4. Traffic Delay Mitigation**

- a. A large part of this will be addressed in Stage 3 (Final Design Process). Lane reductions and lane restrictions will be addressed in the phasing of the project along with the specifications. Lane rental charges can be used on projects in which a lane must be removed from service for construction.
- b. In the work zones, real time traffic data could be used to notify the motoring public of unexpected delays. With the use of radars placed in and before the work zone and variable message boards placed before alternate routes, motorists can be notified of anticipated delays and alternate routes. This equipment and plan will be required in the contract as a pay item, or they will be owned by traffic services and installed by the department.

Traffic mitigation will require a review of the traffic flow during the different phases of the project. Projects on new alignment will have minimal traffic disruption until roadways are tied in, whereas widening or reconstruction projects may affect traffic throughout the contract life. It will be important to note traffic delays prior to construction as several routes are over capacity at present.

#### **9.2.4 Final Inspection**

DOTD is authorized and has established procedures for the partial and final acceptance of construction projects including the final inspection of work and required project documentation.

- DOTD Standard Specification 108.10 establishes the authority and procedures for the Department to terminate a contract, by written notice, for reasons beyond either the department's or contractor's control.
- EDSM III.5.1.5 establishes a uniform procedure for acceptance of construction projects.
- EDSM III.5.1.6 establishes a uniform procedure for partial acceptance of construction projects.
- EDSM III.5.1.7 states the current policy on project certification and submittal of Form 03-40-4217.

### **9.2.5 Final Acceptance**

DOTD is authorized and has established procedures for the final acceptance of construction projects and final payment.

- DOTD Standard Specification 105.17, Acceptance, establishes the procedures for partial and/or final acceptance of work.
- DOTD Standard Specification 109.09, Acceptance & Final Payment, establishes the procedure by which the work will be accepted and final payment made.
- EDSM III.5.1.5, Acceptance of Construction Projects, establishes a uniform procedure for acceptance of construction projects.
- EDSM III.5.1.6, Procedures for Partial Acceptance of Construction Projects, establishes a uniform procedure for partial acceptance of construction projects.

### **9.2.6 Final Audit**

A standard system has been created to minimize complications and assist in the review of final estimates and other audit processes. To expedite processing, the system streamlines the preparation and checking of partial and final estimates.

- EDSM III.5.1.1 describes the filing system for project engineer's offices. It is to insure the development of a standard system that will minimize complications as a result of reassignments, and a system that will assist in the review of final estimates, Form 2059, and other acceptance and audit processes.
- EDSM III.4.1.1 streamlines the preparation and checking of partial and final estimates through consolidation, revision or elimination of unnecessary documentation or reporting as well as computations that are repetitious in order to expedite processing.

### 9.3 Responsibility Matrix and Checklist

Stage 5 Responsibility Matrix			
STEP	District		
A. Project Inspection			
1. Observing contractor's operations	Responsible for		
2. Recording all work performed	Responsible for		
3. Measuring quantities	Responsible for		
4. Collecting haul tickets	Responsible for		
5. Daily diary report	Responsible for		
B. Sampling and Testing			
1. Sampling plan	Responsible for		
2. Taking samples of materials for testing	Responsible for		
3. Review of certificates	Responsible for		
4. Review of source materials	Responsible for		
5. Contractor's QC plan	Responsible for		
6. Observe contractor's QC field testing	Responsible for		
7. Performing QA testing	Responsible for		
8. Submit paperwork to laboratory	Responsible for		
C. Partial estimates			
1. Compile quantities completed	Responsible for		
2. Advance stockpile	Responsible for		
3. Lump sum items	Responsible for		
4. Contract day charges	Responsible for		
5. Enter into ESTI	Responsible for		
6. Send paperwork to HQ	Responsible for		

### 9.4 Project Finance Committee (PFC) Duties in Stage 5

- The PFC monitors and tracks expenditures vs. budget for Stage 5 work.
- The PFC authorizes cash for Stage 5 work by work categories, as it progresses in accordance with the project cash flow plan.

- The PFC receives (from construction division) and reviews large plan change requests that exceed contingency limits and assesses impact to program budget.
- The PFC receives and reviews project close-out report (from construction audit and project control) and accounts for funds (by budget category) being restored to the program. The PFC uses this report in its analysis of financial feasibility during Stages 3 and 4 to mitigate effects of project/program cost escalation.

## **9.5 Deliverables**

The project engineer is responsible for delivery of the final estimate. Refer to the Construction Contract Administration Manual for details.

### **9.5.1 Performance Indicators**

- Percentage of projects completed within contract time ( $= \text{number of projects completed within contract time} / \text{total number of completed projects} \times 100$ )
- Percentage of partial estimates processed on time ( $= \text{number of partial estimates processed on time} / \text{total number of partial estimates}$ )
- Percentage of final estimates processed on time (30 calendar days for projects < \$2 million & 60 calendar days for projects > \$2 million) ( $= \text{number of final estimated processed on time} / \text{total number of completed projects}$ )
- Time to process plan change by project engineer ( $= \text{summation of total number of days to process plan change} / \text{total number of projects}$ )

### CHANGE ORDER REASON(S) CODE CHART

1. Design Error or Omission	<p>1A. Incorrect Plans, Specifications and Quantities (LA DOTD District design).</p> <p>1B. Incorrect Plans, Specifications and Quantities (LA DOTD Headquarters design).</p> <p>1C. Incorrect Plans, Specifications and Quantities (Consultant design).</p> <p>1D. Other (including final plan changes)</p>
2. Differing Site Conditions (unforeseeable)	<p>2A. Dispute resolution (expense caused by conditions and/or resulting delay)</p> <p>2B. Unavailable material.</p> <p>2C. New development (conditions changing after Plans, Specifications and Quantities completed).</p> <p>2D. Environmental remediation.</p> <p>2E. Miscellaneous difference in site conditions (unforeseeable).</p> <p>2F. Site conditions altered by an act of nature.</p> <p>2G. Unadjusted utility (unforeseeable).</p> <p>2H. Unacquired Right-of-Way (unforeseeable).</p> <p>2I. Additional safety needs (unforeseeable).</p> <p>2J. Other.</p>
3. LA DOTD Convenience	<p>3A. Dispute resolution (not resulting from error in plans or differing site conditions).</p> <p>3B. Public relations improvements.</p> <p>3C. Implementation of a Value Engineering finding.</p> <p>3D. Achievement of an early project completion.</p> <p>3E. Reduction of future maintenance.</p> <p>3F. Additional work desired by LA DOTD.</p> <p>3G. Compliance requirements of new laws and/or policies.</p> <p>3H. Cost savings opportunity discovered during construction.</p> <p>3I. Implementation of improved technology or better process.</p> <p>3J. Price adjustment on finished work (price reduced in exchange for acceptance).</p> <p>3K. Addition of stock account or material supplied by state provision.</p> <p>3L. Revising safety work/measures desired by LA DOTD.</p> <p>3M. Other.</p>
4. Third Party Accommodation	<p>4A. Failure of a third party to meet commitment.</p> <p>4B. Third party requested work.</p> <p>4C. Compliance requirements of new laws and/or policies (impacting third party).</p> <p>4D. Other.</p>
5. Contractor Convenience	<p>5A. Contractor exercises option to change the traffic control plan.</p> <p>5B. Contractor requested change in the sequence and/or method of work.</p> <p>5C. Payment for Partnering workshop.</p> <p>5D. Additional safety work/measures desired by the Contractor.</p> <p>5E. Other.</p>
6. Untimely ROW/Utilities	<p>6A. Right-of-Way not clear (third party responsibility for ROW).</p> <p>6B. Right-of-Way not clear (LA DOTD responsibility for ROW).</p> <p>6C. Utilities not clear.</p> <p>6D. Other.</p>

## **10 Stage 6 Standard Operating Procedure**

### **10.1 Purpose**

The activities and products of Stage 6 (System Operations and Performance) complete the project development cycle by instituting a feedback loop to provide input from the department's Operations, Maintenance, and Traffic groups on needed improvements and effectiveness of design and construction procedures. Observations of systems performance and operational issues are critical input to avoid repeating mistakes and improving the cost effectiveness of the transportation system.

### **10.2 Process**

The groups that are key to the evaluation of System Operations and Performance are:

- Traffic Operations
- District Maintenance
- ITS/TMC
- Headquarters Maintenance
- Traffic Engineering
- Design (Preservation)
- Management Systems

The Assistant Secretary of Operations and the Chief Engineer, Office of Highways, will conduct a joint annual review of system performance and budget. The goals of this review will be:

1. To develop an accurate assessment of the status of System Operations and Performance.
2. To review expenditures and develop budget strategies to support Operations, Maintenance, and Traffic Management.
3. To present strategies and direction to the project selection teams.

In order to accomplish these goals, it will be necessary to rely on status reports from the key groups defined above. In some cases, these reports are currently being generated, but where they don't exist, status reports and report guidelines will have to be established.

**Status Reports:** The following status reports will be delivered annually to the offices of the Assistant Secretary of Operations and the Chief Engineer, Office of Highways. The reports will consist of the following products:

- Traffic Report
  - Responsible parties: Traffic Operations Administrator, Traffic Engineering Administrator
  - Traffic Report Products:
    - Status of Traffic Signal management
    - Status of Traffic Sign management
    - Status of Striping and Marking program
    - Status of ITS/TMC
    - Status of Traffic Engineering Program
- System Maintenance Report
  - Responsible party: Maintenance Systems Engineer
  - System Maintenance Report Products:
    - Expenditure and Budget Update
    - Status of Preventative Maintenance
    - Pavement Early Failures
- System Performance Report
  - Responsible party: Management Systems Director
  - System Performance Report Products:
    - Pavement and Bridge Management Status
    - Pavement and Bridge Preservation Status
- Additional Status Reports: In addition to the reports listed above, status reports will be required on the topics listed below. These status reports will be delivered to the offices of the Assistant Secretary of Operations and the Chief Engineer. The responsibility for each of these status reports is listed in the Responsibility Matrix on the next page.
  - Security
  - Rest Areas
  - Ferry Services
  - Telecommunications
  - Worker Safety
  - Environmental Compliance
  - Complaints
  - Maintenance Standards
  - Equipment
  - Construction Work Zones

- Emergency Services
- DOTD Facilities

### 10.3 Responsibility Matrix

STAGE 6 – SYSTEM OPERATIONS AND PERFORMANCE RESPONSIBILITY MATRIX	
REPORTS	RESPONSIBLE
<b>TRAFFIC</b>	Traffic Operations Administrator Traffic Engineering Administrator
Traffic Signals Management	Traffic Services Engineer
Traffic Signing Management	Traffic Services Engineer
Striping & Marking Program	Traffic Services Engineer
ITS/TMC	ITS Engineer Manager
Traffic Engineering Program	Traffic Engineering Administrator
<b>SYSTEM MAINTENANCE</b>	Maintenance Systems Engineer
Expenditure and Budget	Maintenance Systems Engineer
Preventative Maintenance	Maintenance Systems Engineer
Early Failures	Maintenance Systems Engineer
<b>SYSTEM PERFORMANCE</b>	10 Management Systems Director
Pavement Management	Pavement Management Engineer
Pavement Preservation	Pavement Preservation Program Manager
Bridge Management	Bridge Management Engineer
Bridge Preservation	Structures and Facilities Engineer
<b>MISCELLANEOUS SYSTEMS</b>	
Security/Emergency Services	Emergency Services Coordinator
Rest Areas	Rest Area Program Manager
Ferry Services	Movable Bridge and Ferry Maintenance Engineer
Telecommunications	Telecommunications Director
Worker Safety	Loss Prevention Director
Environmental Compliance	Environmental Testing Engineer
Complaints	IT Mainframe Support
Maintenance Standards	Maintenance Systems Engineer
Equipment	DOTD Equipment Manager
Construction Work Zones	Systems Construction Engr.
Emergency Services	Emergency Services Coordinator
DOTD Facilities	Structures and Facilities Engineer



## Appendix I: Project Plan

One of the first responsibilities of the project manager is to develop a project plan. The purpose of this plan is threefold: first, it defines the objective of the project and outlines the project manager's plan, style, and prerogatives in how the project is to be conducted; second, it is used as a checklist and a guide by the project manager through the course of project development; third, it is document that will be shared, discussed, and refined with the participation of the project team and upper management to establish "rules of engagements" early in the project development process.

A project plan usually consists of the following sections:

1. **Project Overview:** This narrative will define the project's purpose and relationship to the environment. In short, this narrative must define what the project is all about. The framework for such a narrative can usually come from the Purpose and Need Statement articulated in the Stage 0 or Stage 1 documents.
2. **Project Scope:** Define project objective and develop a clear and concise scope for the project. This objective must include all constraints and requirements that the project must meet. These requirements and constraints are usually extraordinary conditions that may have been imposed on the project by external or internal entities due to particular issues associated with this project. Become completely familiar with all aspects of the project—know who the players are and what the rules of the game are.
3. **Environmental Requirements, Context Sensitive Issues, and Design Exceptions:** Identify all special issues regarding environmental issues, context sensitive consideration, and design exceptions that must be considered during the design development (Stage 3) phase of the project. This information should be readily available in the Stage 1 documents.
4. **Project Schedule–Milestones:** Develop a coarse project work breakdown schedule that includes major project milestones. This schedule must be developed with consideration of the availability and timing of financial resources for design and construction of the project. At this point, a sufficiently detailed Gant Chart will suffice, provided that particular attention is paid to specific project requirements (see Chapter 2, page 15, for an example of a Gant Chart).
5. **Project Organization:** Develop an organization chart for the project; review project position descriptions and outline duties, responsibilities and restrictions for each project position; and coordinate efforts with functional managers to identify and select possible

project team members. Periodically review project organization and institute changes to the organizational structure and personnel, if necessary.

Note: for some projects, such as those covered by categorical exclusions, the team may consist of only the project manager in addition to one or two other members. Complex projects, such as capacity improvements, major bridge projects, corridor upgrades or new infrastructure projects will require a full team.

6. **Budget and Funding Sources:** Identify sources, amounts, and availability timing of funds required during the project development (Stage 3) and construction (Stage 5) phases of the project.
7. **Project Responsibility Matrix:** Develop a matrix of responsibilities for potential team members with specialized expertise. At this point the matrix will not include specific team member's name; however, required specialized talents such as road design engineer, real estate, geotechnical engineer, district project engineer, etc.
8. **Staffing Plan:** Develop a preliminary list of manpower requirements and staffing source for the duration of project. Include names of desired team members. This plan is to be used during the negotiation process with functional managers. On a preliminary basis predict when and for how long each team member will be needed. The Program Project Management System (PPMS) can be used as an effective planning tool during this activity.
9. **Contractual Agreements:** Review all authority, permits, agreements, and financial and other contractual agreements affecting the project's success. Make provisions for updating and adhering to all terms and requirements of these agreements.
10. **Pitfall:** Identify all potential problem areas and make provisions to address them if and when they occur. Simply anticipate problem areas; make a list and plan to meet them head-on.
11. **Evaluating Project Team Members:** State how a team member's performance is to be evaluated and report results to the functional manager for inclusion in the team member's annual PPR. Identify a set of objective criteria to be used in the evaluation. These criteria should meet upper management approval.
12. **Possible Rewards:** State any special reward that may be available to the project team. Identify the source, amounts, and the special criteria for selection of the candidate recipient.

## **Appendix II: Estimating Process**

### **1     *Importance of Quality Cost Estimates***

The reliability of project cost estimates at every stage in the project development process is necessary for responsible fiscal management. Unreliable cost estimates result in severe problems in DOTD's programming and budgeting, local and regional planning, and leads to staffing and budgeting decisions that hinder the effective use of limited resources.

#### **1.1   Goal and Objective**

DOTD's goal is to avoid project cost overruns. One objective is to identify "unforeseen items of work" before the project concept, scope, and budget have been determined; thus minimizing the differences between preliminary project planning cost estimates and final project design cost estimates. Identifying costly "unforeseen items of work" after the project has been programmed may stop or delay a project.

The term "project cost estimate," as used during the project development process, includes all capital outlay costs, including right of way, structures, utility, and landscaping. Project cost estimates should never be artificially reduced to stay within the funding limits, nor should they be reduced to provide the appearance that more projects can be funded. Likewise, project cost estimates should not be artificially raised beyond the contingency percentages provided for in this appendix unless adequately justified.

### **2     *Consistent and Comprehensive Methodology***

It is acknowledged that cost estimating is not an exact science. However, DOTD must strive for reliable project cost estimates, so that projects can be delivered "within budget." To this end, it is required that project cost estimates be prepared using a consistent and comprehensive methodology. Even with a consistent and comprehensive methodology, careful attention is needed to ensure a quality cost estimate. The cost estimator needs to research, compare and, above all, use their professional judgment to prepare a quality cost estimate.

#### **2.1   Identify Contract Items of Work**

The identification of available funding allows the project to transition from the environmental and planning phase to the design phase. At this time, all of the significant project features should be known and many contract items of work can be identified. In addition, the items of work

identified and estimated during the project planning phase should now be better defined as design work progresses.

## **2.2 Staying Current**

Cost estimates, in a sense, are never completed. If allowed to remain static for extended periods of time, they will become outdated and unreliable. This may be for a number of reasons both project related as well as non project related. Examples of non-project related factors may be market trends and labor cost, availability of materials and contractors, or changes to specifications, both design or construction.

## **2.3 Contingencies Versus Confidence Factor**

Contingency factors for project planning cost estimates vary depending on what stage the project is in, the type of project, and the confidence of the estimator. Contingencies are intended to compensate for the use of limited information. The percentage should go down as the project becomes more defined and thus less unknown. Contingencies are not intended to take the place of incomplete design work. Project alternatives and their associated cost estimates must be thoroughly compiled by diligently using all the available data, modifying that data with good judgment and using past cost estimating experience and appropriate contingency factors so that the cost estimates can be used with confidence.

## **2.4 Documentation**

Typically, the planning and development process for a project occurs over a period of several years and many decisions and agreements are made. All too frequently during this time, project personnel, project site conditions, or philosophical position changes occur that can affect the continuity and accuracy of earlier project decisions. To help alleviate this situation, all project decisions, agreements, design criteria, and constraints should be thoroughly documented and retained in the project files. This philosophy also applies to notes, decision, photos, and mapping used during field reviews of the project site.

# **3 Prepare Reasonable Cost Estimates**

Estimators are expected to prepare reasonable project cost estimates that represent the total cost to complete the project. Experience has shown that project cost estimators should consider the following factors that can affect the cost of projects.

### **3.1 Traffic Conditions**

Traffic conditions have a significant affect on costs. Estimated prices should be adjusted to reflect difficulties, dangers, and risk due to exposures caused by traffic conditions. Considerable deliberation should take place to balance decisions affecting costs and traffic handling and safety.

### **3.2 Restrictive Work Hours or Method of Work**

Restricting the contractors working hours or the method of work on a project will usually have major affects on costs. The cost for work that is limited to short shifts, or required to be completed in long shifts, or limited to nighttime operations should be increased to reflect the cost of premium wages required for such work and for the general inefficiencies and decreased productivity that may result.

### **3.3 Quantities of Work**

Small quantities of work typically have higher unit cost than identical work in larger quantities. This is due to mobilization as well as overhead and other such costs that must be distributed over a smaller base. Production rates are also less efficient and are usually lower for small quantities, which tend to increase unit costs.

### **3.4 Geographic Location/Site Conditions**

Geographically remote locations usually result in higher costs. Consideration should be given to availability of skilled labor, suppliers, and materials. Environmental conditions and site specific accessibility factors may also contribute to higher unit cost. Urbanized areas with limited right-of-way can also result in higher costs.

## **4 *Monitoring and Updating Cost Estimates***

All project cost estimates are to be monitored and maintained current in LETS and PPMS. Following the initial estimate, the timing of the updates is guided by the following factors:

### **4.1 Annual update**

All cost estimates must be kept current by updating at least once a year. This annual update is only necessary if the estimate is not updated for any of the reasons listed below. If no new project information has come about and no changes in scope have occurred, this update would focus on unit price changes as a result of inflation or other market conditions.

## **4.2 Project Stage Cost Estimate**

A current cost estimate is needed at the end of each project stage. This value is used during the course of the subsequent stage for up to one year or until something changes or more accurate project detail is known.

## **4.3 Significant Changes in Identified Project Costs**

Other appropriate times to update the project cost estimate is when a project development workflow task supports the preparation of a more detailed cost estimate (i.e., when a task involves an activity to review the project and create a cost estimate). Examples of this include when a preliminary site investigation more clearly identifies a hazardous waste problem, or when a materials report clarifies the foundation conditions.

# **5 Stage 0 Cost Estimate**

## **5.1 Initial Cost Estimate**

For most projects, a feasibility cost estimate is required to determine financial feasibility and whether or not to proceed with development of a project initiation document. It is prepared prior to the project initiation process and prior to initiation of project, environmental and planning studies.

## **5.2 Methodology**

It is understood that for project cost estimates developed at the time of project initiation, sufficient data may not be available to prepare a detailed estimate. However, the need for project cost information at very early stages is necessary for “go/no-go” decisions. Although this information is not used for programming the project, it is vital that it be comprehensive, realistic, and consistent with known information.

In years past, when the majority of state highway projects were new roadways on new alignment with a very well defined scope, project feasibility cost estimates were prepared using a variety of methods. The most common method was a cost per mile basis for a particular type of facility. Today, the majority of projects either maintain or improve the operation of the existing system. Cost estimates for these projects are more difficult to scope and cannot, and should not, be determined by a “windshield survey.”

## **5.3 Scoping for Project Feasibility Estimates**

The project feasibility cost estimate is intended to determine an order of magnitude for the project. It is essential, therefore, that the project be adequately scoped with a clear understanding of the purpose and description of the proposed action. The “worse probable case” scenario

should always be assumed, particularly on reconstruction projects. Existing facilities thought to be adequate may become inadequate because of changes to standards, new data, further deterioration prior to construction, etc.

## **5.4 High Cost Items**

A thorough understanding of the proposed action or project combined with “hands on” site reconnaissance surveys, with input from local district personnel and others, is necessary for most significant projects. This will assist estimators’ awareness of high cost items that must be quantified such as: costs of mitigating hazardous waste and other environmental impacts, major utility relocation, noise barriers, retaining walls, major storm drains, transportation management plan, traffic handling, etc.

## **5.5 Real Estate**

This policy is designed to increase the reliability of Real Estate relating to proposed projects at various stages in project development.

The Real Estate section will develop a database of unit values for various types of projects. A cost-per-mile schedule will be developed that can be correlated to most all proposed projects in a given area of the state. The database will be developed for each of the following: rural widening, rural four lanes, urban five lanes, urban widening, rural to urban widening, rural to urban four-laning, bridges. The Design section will assist Real Estate in identifying the various types of projects that have already gone to letting so that historical data can be used to develop the schedule. The cost-per-mile approach will work in areas where property values are stable; however, in progressive commercial urban areas where property values are increasing at a high rate, a more detailed approach must be used. The estimator should consider using recent similar comparable sales and assess the full extent of the owner’s loss impacts on owner-occupied business and residences, since this is one of the considerations that can significantly drive up acquisition costs. This more intensive analysis can be performed at any stage of the projects, but the accuracy of the estimate is dependant on Design providing sufficient project taking data and other design features.

When the estimate is requested, the type of project should be provided along with the total width and length of the project as well as a map showing the location of the project. The project should be described in a manner so that the appraiser/estimator can clearly understand the amount of additional right-of-way that will require a cost estimate. The proposed length of the project should be easy to identify.

Upon receiving the request for a Stage 0 estimate, the Real Estate Chief Appraiser will assign a staff appraiser to prepare the estimate. The estimator will evaluate the database and choose the most recent comparable project to apply the unit cost per mile and apply a 20% contingency to the estimate to compensate for appreciation in property value. If the project is in a high commercial urban area where property values have been appreciating at a high rate, the estimator should apply recent comparable sales and make an onsite inspection or increase the contingency rate accordingly.

## **5.6 Utilities**

The Utility unit will furnish the Real Estate section the total cost that has been set up for utility relocation at the completion of the project along with the total number of utilities. This total cost for utilities is the sum of the total agreements amount plus the total URAF agreements for each project. To start this process the Utility Unit will analyze all the projects that were let over the last calendar year. Then they will input new data as soon as the projects go to letting that involve utilities and right-of-way. This cost information will be matched with the Real Estate database for cost estimates for both Real Estate and Utilities. A cost per mile will be established for completed projects and unit costs will be available in each geographical area of the state for various types of reports.

When the Utility Estimates are requested, the Headquarters' Utility Relocation Specialist will utilize the most comparable projects in the Cost Estimate data base to establish a cost estimate for utilities on this project. The Design Utility Specialist will need to provide the estimated amount of the high cost utility items and provide a list of the names of the utility companies that are affected. This collaboration between the Headquarters and District Utility Specialist will provide the most reliable utilities relocation estimate.

A clear understanding of the length of the project and the type of project that requires an estimate must be made available to the Headquarters' Utility Relocation Specialist. A 20% contingency must be applied to the estimate arrived from the data base to compensate appreciation in utility cost to account for inflation, etc.

## **5.7 Bridge Design**

These initial project estimates are usually developed based on historical data. Previously constructed projects with similar characteristics are used to generate the base unit cost of the major items contained in the project. The existing bridge structures are reviewed and a projection is made of the type, size, and location of the new structure along with any major construction-related items such as maintenance of traffic, site characteristics, contractibility issues that may impact the cost estimate.



A preliminary analysis is performed by the Bridge Representative to establish the feasibility of the proposed project. The development of the estimate is based on the estimated bridge improvement and historical bridge cost data.

Major structures require an in-depth review to determine the requirements for navigation, navigational clearances, alignments studies, and traffic studies to determine bridge typical sections and maintenance of traffic needs. A site visit with knowledgeable local persons is necessary for most projects.

The development of the preliminary estimate is based on historical cost of similar projects equated to the square footage of deck area for proposed bridge structure. A contingency factor of 25% of the bridge-related cost will typically be applied at this stage to account for unforeseen items.

Items that may be considered at this stage in the cost estimate are as follows:

#### **Types of Structures**

1. Slab Spans
2. Concrete girder spans on pile bents
3. Concrete girder spans on column bents
4. Steel girder spans on pile bents
5. Steel girder spans on column bents
6. Interchange with complex geometry
7. Moderate river steel spans with/without vessel impact
8. Major river steel spans with/without vessel impact
9. Railroad overpasses fill/cut section
10. Low/Mid/High level movable

#### **Other Considerations**

1. Type of construction i.e., end-on, split slab
2. Detour structure or scheme
3. Hydraulic issues (site specific)
4. Geotechnical issues (regional specific)
5. Preliminary design criteria

## **5.8 Road Design**

Initial project estimates are based on the available information furnished including the projected limits, proposed typical section, existing roadway configuration and other historical data concerning the route. The estimator needs to have an understanding of the proposed scope and purpose of the project. Road Design will establish a cost for the different types of improvement that are generally planned. This information will be housed in the Road Design section and will be updated on yearly basis using bid prices for similar type projects let to contract during the last year and over a three year period to develop trends in construction cost. This information will be based on a per mile basis and general interchange configurations.

Items that need to be considered are:

1. Number of proposed lanes
2. Existing roadway type and condition
3. Rural vs. urban design
4. Project traffic volumes
5. Anticipated construction restraints
6. Handling of traffic during construction
7. Required drainage improvements
8. Lighting/signalization

## **6 Stage 1 Cost Estimate**

Cost estimates are prepared continuously throughout the development of alternatives in the environmental process. Since the project cost estimate is prepared as part of the project approval process, it should be made after completion of the public hearing process, selection of the preferred alternative, and completion of the environmental document.

The project cost estimate is prepared using the same format as used for the other project planning cost estimates. However, since the preferred alternative has been selected, the project cost estimate can now be more definitive. It is now tied directly to a specifically defined project scope and description and becomes part of the project scope and budget report.

### **6.1 Real Estate**

The estimator will use the same database as described above and apply the more recent data from similar projects. In progressive urban areas the estimator should perform a detailed estimate using recent comparable sales for land values, including improvement values, damages,

relocation cost, added percentage for administrative settlements and expropriation cost applied to the total estimate. The Real Estate estimates in Stage 1 should also be updated at a 10% yearly rate except for the progressive urban areas of high density commercial properties where a 15% to 20% per year increase should be applied.

## **6.2 Utility**

The estimator will use the same database as described above and apply more recent data from similar projects. The Headquarters' Utility Specialist will request the District Utility Specialist to make an onsite inspection to determine if there are any abnormal cost items for utility relocation and provide the estimated cost of these items. The District Utility Specialist will also be asked to estimate the number of utility companies on the proposed project. A 20% contingency will be added to compensate for inflation and to complete the estimate. For the updated estimate, the most recent database plus 20% contingencies would be used. This estimate will include the correlated cost by the use of the database, plus the cost of abnormal items provided by the district and the 20% contingency rate.

## **6.3 Bridge Design**

A preliminary evaluation is performed by the Bridge Representative for the proposed bridge improvement. The estimate is updated based on the historical bridge cost data applied to the proposed improvement accounting for any additional information gained since Stage 0.

During this stage additional information is gathered by the bridge representative and a further definition of the bridge improvement is made. The information available during this stage usually consists of the following:

1. Site visit
2. Proposed Design Criteria
3. Long range plan for the route
4. District questionnaire
5. Additional aerial photography if required
6. Proposed maintenance of traffic scheme
7. Master structure files NBI data and existing bridge configuration
8. Navigational vessel data
9. Preliminary geotechnical data
10. Traffic study
11. Environmental documentation and finding
12. Identification of selected alternate

During this stage of the project, traffic data is gathered, a navigational clearance is identified, the alignment is studied, and the bridge structure type is refined. Consideration is given to match the construction technique to the maintenance of traffic and environmental conditions.

The estimate prepared in Stage 0 is revisited and adjusted to incorporate new information gained during Stage 1. The estimate is based on historical cost of similar projects equated to sq. ft. to deck area for proposed bridge structure. A contingency factor of 20% of the bridge-related cost typically will be applied at this stage to account for unforeseen items. Estimate magnifiers should be applied to the estimate to account for cost increases due to known constraints or conditions.

## **6.4 Road Design**

Prepare a cost estimate during this stage based on major items such as average fill and/or cut, area of clearing and grubbing, mobilization, signs and barricades, base course items, pavement items, major cross drains, average size for subsurface drainage including catch basins based on a closer defined length of project, updated unit prices, and other information concerning detours and sequencing of construction phases if known. Multiply cost of major items by 1.4 to cover the cost of other items such as removals, stripping, construction layout, fencing, and other minor items. Compare this estimate to the estimate prepared in Stage 0, retaining the highest.

### **Available information**

1. Defined limits of project
2. Aerial photography
3. Parish maps and/or city maps
4. Proposed typical section type, (overlay, replacement, widening)

### **Needed information**

1. Proposed scope (intersection improvement, adding two lanes to existing two lane, widening from two lane to three or five lane urban, complete new construction of two lanes or multi lane, or building an interchange)
2. Existing and project traffic volumes
3. Preliminary typical section design
4. Proposed vertical and horizontal grade
5. Geometric layout of intersections and interchanges

## **7      *Stage 2 Cost Estimate***

The process for developing a Stage 2 estimate is only applicable for projects that remain in this stage more than one year. If this is the case, the estimate should be reviewed to determine if any new pertinent information has come about, if any department policies or design specifications or criteria have changed that would impact the values and assumptions previously made in the estimate documentation. Inflation or increased in base line unit costs for other reasons may necessitate investigation and updating.

## **8      *Stage 3 Cost Estimate***

For most projects the minimum level of project development that is necessary to accurately identify the costs and delivery schedule of a project occurs at the preliminary plans stage. A preliminary plan is required for every project. The plan is developed to show preliminary geometric details, and includes final design criteria, proposed line and grade, tentative right of way, preliminary intersection or interchange layouts, bypasses, and pertinent topographic features.

As with Stage 2 estimates, reviews/updates are required one year from the date of the last estimate or at completion of final preliminary plans, whichever comes first. At the final preliminary stage, most controlling project information should be finalized, including limits of construction and required right of way, traffic control plan, plan quantities for all major items, construction time, sequence of construction and limitations, environmental and hazardous waste mitigation, and utility relocation plans.

At this level of project development, preliminary plan quantities will be used together with historic cost data to produce the estimate of construction cost. A description of how the historic cost data is collected is described in the following sections. Right of way estimates will be based on the tentative right of way lines identified in the preliminary plans. Also at this point in the project development process, any unusual conditions or costly items, such as major utility adjustments, should be identified.

When final construction plans reach the 95% (ACP) stage, all construction bid pay items have been identified and an ACP cost estimate is prepared. The major pay items utilized in final preliminary plans are now final and the percentage values used for the remaining items are now replaced with the actual pay quantities items. No contingency factor is used and magnification

(plus or minus) is incorporated into individual historic pay items to account for size of quantity, site accessibility, availability of materials, etc.

Upon completion of the project final design plans, the Engineer of Record prepares the final cost estimate for the project prior to submittal of the plans, specification and estimate (PS & E) to Project Control for advertisement, letting, and award of a construction contract. This estimate is prepared using the bid items and plan quantities derived from the completed final plans and applying the applicable historical unit cost data to bids.

This estimate becomes the basis for the engineer's estimate that is prepared by the project manager. The engineer's estimate is a tool that will be used to analyze the bids received on the project. The engineer's estimate is completed immediately before receiving bids on the project and therefore considers the most current price data.

## **8.1 Real Estate**

The estimate should be updated at 60% right-of-way maps corresponding to the joint plan review. The chief appraiser shall assign a review appraiser and a staff appraiser or consultant to perform a detailed cost estimate utilizing recent comparable sales to develop the land value. The estimate shall also contain the estimated damages including full extent of owners' loss. The chief appraiser will utilize the estimate developed by the staff appraiser and review appraiser and make necessary adjustments for administrative settlements, legal settlements, court awards, real estate/legal consultant fees, expropriation costs, etc. Relocation assistance estimate costs will then be included to determine the final estimated real estate cost estimate. Real Estate should correlate the detailed estimate to the real estate cost developed from the database. If the correlation is close in the future, real estate might be able to have funds set up on a majority of the projects from the unit cost developed from the database from old projects.

## **8.2 Utility**

At 60% right-of-way maps, Stage 1 processes are used. However, utilizing the most recent data base, plus the district utility specialist, will provide a better estimate on the number of utilities and the abnormalities that drive the utility relocation costs. The abnormalities are pipeline crossings, electric transformer units or any structure that the cost would be 100% state/federal funded. The headquarters' utility relocation specialist would add the additional costs from the district to the correlated costs from the most recent data base to arrive at the estimated costs for utilities. A 20% contingency should be added to complete this estimate. The total cost of utilities will be transmitted to the Real Estate Chief of Acquisition who will combine this estimate with the Real Estate estimate and request Project Control to set up the funding.

### **8.3 Bridge Design**

Cost estimates for the bridge plan portion of projects and related structures are developed based on final preliminary plans that will include quantities for all major items. At this time, the final design criteria establishes the bridge typical section, bridge length, and type as well as the construction sequence and technique. Hydraulic information including predicted scour and back water has been incorporated and the geotechnical data has been received. A foundation plan has also been developed. The need for a pier protection system and maintenance of marine traffic has been considered. Magnifiers will be used to compensate for various conditions of the project such as project size and complexity. At this point a contingency factor of between 10% and 15% is recommended.

### **8.4 Road Design**

At 95% preliminary (pre plan-in-hand), a new estimate should be prepared based on major items that will be included in plans such as earthwork, paving, drainage items, permanent signing, lighting signals, mobilization, temporary signing, and any special sequencing and items for handling of traffic. This estimate should be based on the latest available unit prices. Multiply cost of major items by 1.25 to cover cost of all other unknown items. Compare this estimate to the previous estimates to make sure that all items are covered.

At ACP stage, another cost estimate should be prepared based on all items using the latest unit prices. A revised estimate should be prepared after all ACP comments have been addressed. A contingency of 10% is recommended.

## Appendix III: Project Finance Committee

### 1 *PPM No. 61*

#### Louisiana Department of Transportation and Development Secretary's Policy and Procedures Memorandum

PPM No: 61	Subject: Establishment of DOTD Project Finance Committee (PFC)
Effective Date: October 1, 2003	Revision Date:

Instructions: This memorandum supersedes all other memoranda and manuals.

#### 1. PURPOSE AND SCOPE

This policy will establish the DOTD Project Finance Committee (PFC). It will be a standing committee for the purpose of advising and making policy recommendations to the DOTD Secretary and Executive Committee on all aspects of project finance and budget, including annual program budget partitions, revenue projections, revenue enhancements, innovative financing alternatives, including but not limited to, bonds and tolls, means and impacts of funding major projects, and both short term and long range fiscal planning for projects. The PFC is the operating entity of the Department charged with the responsibility to accomplish the tasks of the program & project finance committee.

#### 2. OBJECTIVE

The objective is to provide DOTD with an integrated Capital Outlay Management and Decision Support Structure for program and project budgeting and accounting that will facilitate control of scope, schedule, and quality. DOTD's program and project finance system will fulfill this objective by facilitating or providing the following:

Management of capital outlay funding sources including federal, state, and others.

Management of the timing of expenditures and revenues to control cash flow requirements.



Coordination of budgets, expended amounts, and schedule of obligation requirements.

Identification of all expected project costs in the budget process.

Management and accountability of project scope throughout the lifecycle of the project.

Identification of the amounts and reasons for changes in projected costs for a project throughout its lifecycle.

Timely updates to project budgets as additional cost items are known.

Access to budget and accounting information by program and project managers to enable them to be accountable for delivering projects and programs in accordance with budgets, scopes, and schedules.

Access to program financial information to enable senior executives to anticipate program and project problems and evaluate the impacts of potential solutions to those problems.

## 2. COMMITTEE

The Undersecretary, Office of Management and Finance, shall chair the PFC that will be comprised of the following members:

Contract Services Administrator (Chief Engineer's designee)

Transportation Planning Administrator

Budget Section Administrator

Budget Section Capital Outlay Manager

Project Control Administrator

Accounting Section Administrator

Preservation Program Manager

Operations Program Manager

Safety Program Manager

Capacity Program Manager

FHWA Financial Manager

### 3. OPERATING PROCEDURES

The complete operating procedures of the PFC are contained in the Program & Project Finance Standard Operating Procedures (SOP). The specific duties of the PFC are outlined phase by phase in the SOP.

### 4. POLICIES

Prior to establishing or revising agency policies pertaining to program & project finance, proposed revisions will be presented to the DOTD SIPIC for review and approval.

### 5. MEETINGS

The PFC shall typically meet on the first and third Thursdays of each month. Additional or fewer meetings shall be held at the discretion of the Chairman. An agenda (see page III-4) for each meeting will be prepared by the PFC Secretary and delivered to the members of the committee at least 2 working days prior to each meeting. The Committee may also invite additional staff to present information pertaining to individual agenda items on an as-needed basis.

### 6. DELIVERABLES

Financial policies and procedures to support improved project budgeting, accounting, and reporting.

A data warehouse to integrate project financial information to meet the reporting and analysis needs of management and staff.

Improved project budgeting procedures to provide more inclusive and realistic budgets with improved tracking of changes for improved accountability.

Linkage of projects to programs to provide an assessment of how program funds are spent.

Improved management reports.

The PFC provides reports as needed to the Secretary and Executive Committee.

The PFC produces the budget partition report.

The PFC provides management with a total program summary organized by budget (sub-program preservation, safety etc.) partition and work function. Management uses this summary to certify to FHWA that a program is financially constrained.

Other proposed spending that is not project related.

Agreements with financial obligations.

## 7. DOCUMENTATION

The proceedings of each committee meeting will be duly recorded by the PFC secretary and copies distributed to each committee member. A specific recommendations memorandum will be prepared as well as other required PFC deliverables as outlined in the program & project finance SOP. This documentation may become is subject to review and discussion by the SIPIC and ultimately will be submitted to the Secretary for approval.

## **2 PFC Meeting Format**

### I. Review of Revenue Projections

Report #1: TTF (from Patty Parsons)

### II. Review of Cash Balances

Report #2: Federal Funds (from Terry Cormier)

Report #3: State Funds (from Eric Burgess)

Report #4: TIMED Funds (from LTM and Patty)

Report #5: GO Bonds (from Bob Hamilton)

Report #6: DEMO

### III. Review Previous Month Letting List and Next Month Letting List

Report #7: Project Letting Recap (Stage 4) (from Robin)

### IV. Review Stage 0-3 Encumbrances

V. Review Project Budgets by Exception

Report #8: Project Budget Change (Doesn't exist) (PPMS)

VI. Review Stage 5 Expenditures, Encumbrances and Plan Changes, Close Outs

VII. Prepare Monthly Checkbook Balance and Secretary's Recommendation Report

VIII. Extra Agenda Items from Calendar (see Appendix C)

**3 PFC Calendar of Tasks (To Be Published)**

	Stage 0	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5
January						
February						
March						
April						
May						
June						
July						
August						
September						
October						
November						
December						

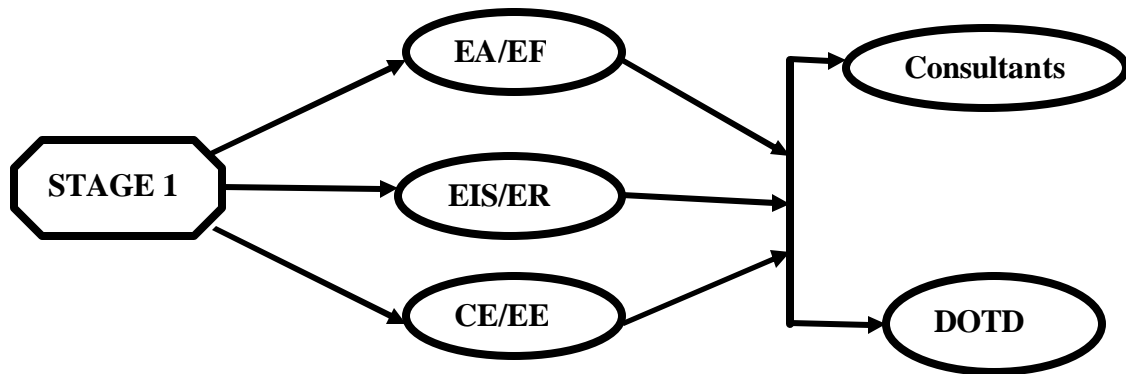
## **Appendix IV: Team Building Scenarios**

### **1     *Stage 1***

Stage 1 takes a project through the planning and environmental assessment process. The outcome from Stage 1 will identify a preferred alignment for the project with a clear description of scope, budget, and major design features. From the environmental standpoint, Federal-aid projects will be classified as an Environmental Assessment (EA) resulting in a Finding of No Significant Impact (FONSI), Environmental Impact Statement (EIS) resulting in a Record of Decision (ROD), or Categorical Exclusion (CE). For state-funded projects, the projects will be processed as an Environmental Exclusion (EE), Environmental Finding (EF), or Environmental Record (ER).

Stage 1 activities (planning and environmental process) can be conducted by a consultant or a staff of DOTD personnel. In either case, DOTD's environmental section will assume the lead role in the process. For simple or programmatic projects (usually CE/EE projects), a single project manager will be assigned to the project. This person could come from headquarters or district staff. If the project is complex, it will usually be assigned to two project managers from the DOTD staff; one responsible for planning/environmental phase (Stage 1) and the other responsible for all other project development phases (Stage 2, Stage 3, and Stage 4). For these type projects, it is common to utilize the services of one or more consulting firms.

The following figure depicts various possibilities involved in the management of the Stage 1 process. The first step in the process is the determination of the type of environmental action (EA/EF, EIS/ER, or CE/EE). This responsibility is vested with the DOTD Environmental Engineering Administrator. Next is the decision regarding how the project is to be conducted: in house or by a consultant. And the final step is the appointment of the project manager or the project managers.



### Stage 1 Activities

The above diagram results in the following three scenarios:

- EA or EIS efforts performed by one or more consulting firms under the direction of a PM and a small project team from DOTD.
- EA performed by DOTD staff with possible participation by specialized consultants from the private sector.
- CE evaluation performed by a team of DOTD staff (PM from either headquarters or district) with possible participation by specialized consultants from the privatized sector

#### 1.1 EA & EIS Performed by Consultants

Large planning and environmental projects require allocation of a substantial amount of human capital. Due to lack of manpower at DOTD, such projects are awarded to consultant firms with demonstrated expertise in NEPA environmental processing and location engineering. When such a consulting firm is utilized, DOTD will have the responsibility to guide, direct, and approve some of the activities performed by the firm. When a team of consultants is utilized for project planning with EA or EIS components, a small project team consisting of DOTD staff must be assembled to work with the consulting team in the development of the project. The steps to assemble such a project team are:

1. Deputy Assistant Secretary for Planning and Programming (DASPP), Chief Project Development Engineer (CPDE), and the appropriate program manager (PGM) meet to discuss specifics of the project and to plan for the appointment of project managers.
2. DASPP appoints a project manager (PM) from the Office of Planning and Programming (PMPP).
3. CPDE appoint a PM from the Project Development Division (PMDD).
4. PMPP assumes the lead role for Stage 1 activities.
5. The PMs meet and conduct preliminary discussion as to their cooperative agenda.
6. Each PM studies the go/no-go document from Stage 0 in addition to all other relevant information to become fully familiar with the project scope and conditions unique to the project.
7. The PMs meet and establish a preliminary Project Plan (see Appendix I for more information). This plan will include the outline of a scope of work for Stage 1 activities. This scope of work will identify tasks to be performed by the consultants and those to be performed in-house by the DOTD staff.
8. The PMs meet with Consulting Selection Engineer to discuss plans for advertising for consultants.
9. The PMs meet with managers of various functional areas (road, bridge, right-of-way, ....) to seek input regarding the Project Plan and to discuss appointment of team members for Stage 1 activities.
10. PMPP finalizes scope of work, establishes preliminary time line for Stage 1 activities and develop an estimate for the consultant fee.
11. PMs meet with the “banker” to discuss means of finance for Stage 1 activities.
12. PMPP contacts appropriate state and federal resource agencies to alert them of the pending project and advises them of expectations regarding the level of efforts needed.
13. PMs proceed with the consultant selection process by playing an active role in the selection process.

14. PMs negotiate the consultant contract with regard to the scope, cost, and timelines. Subsequently issue Notice to Proceed in a timely manner.
15. PMPP develops a detailed schedule of activities using the Program Project Management System (PPMS).
16. PMPP, with assistance from PMDD, identifies candidate task managers for various project tasks.
17. PMPP negotiates assignment of DOTD task managers with appropriate functional managers. PMPP finalizes assignment of task managers.
18. PMs hold a project initiation meeting with all team members and map out the project plan.
19. PMs finalize the financial plans with the “banker.”
20. Project is initiated.

## **1.2 EA Performed by DOTD Staff**

When a decision is made to conduct a Stage 1 project in-house with an EA outcome, the department makes a substantial commitment of labor to that project. It is important to ensure that such a commitment would not adversely affect other on-going commitments. The team building process in such a case should follow these steps:

1. Deputy Assistant Secretary for Planning and Programming (DASPP), Chief Project Development Engineer (CPDE) and the appropriate program manager (PGM) meet to discuss specific of the project and to plan for the appointment of project managers.
2. DASPP appoints a project manager (PM) from the Office of Planning and Programming (PMPP)
3. CPDE appoints a PM from the Project Development Division (PMDD).
4. PMPP assumes the lead role for Stage 1 activities.
5. The PMs meet and conduct preliminary discussion as to their cooperative agenda.
6. Each PM studies the go/no-go document from Stage 0 in addition to all other relevant information to become fully familiar with the project scope and conditions unique to the project.



7. The PMs meet and establish a preliminary Project Plan (see Appendix I for more information). This plan will include the outline of a scope of work for Stage 1 activities. This scope of work will identify tasks to be performed by DOTD staff from headquarter and districts.
8. The PMs meet with managers of various functional areas (road, bridge, right-of-way, ....) to seek input regarding the Project Plan and to discuss appointment of team members for Stage 1 activities.
9. PMPP finalizes scope of work, establishes preliminary time line for Stage 1 activities, and develops an estimate for Stage 1 cost.
10. PMs meet with the “banker” to discuss means of finance for Stage 1 activities.
11. PMPP contacts appropriate state and federal resource agencies to alert them of the pending project and advises them of expectations regarding the level of efforts needed.
12. PMPP develops a detailed schedule of activities using PPMS.
13. PMPP, with assistance from PMDD, identifies candidate task managers for various project tasks.
14. PMPP negotiates assignment of DOTD task managers with appropriate functional managers. PMPP finalizes assignment of task managers.
15. PMs hold a project initiation meeting with all team members and map out the project plan.
16. PMs finalize the financial plans with the “banker.”
17. Project is initiated.

### **1.3 CE Performed by DOTD Staff**

CE projects usually do not require detailed planning and environmental analysis. These projects are mostly programmatic in nature and are conducted on annual or regular bases. For example, a simple bridge replacement project or an overlay project can be accomplished with minimum planning. As such, the project can rapidly move from Stage 1 to Stages 2 and 3. Normally these types of projects are handled in-house with minimum assistance from the consulting community. These type projects are managed by a single project manager and such person usually comes from the headquarters or district design staff. The team building process in such a case should follow the following steps:

1. Chief Project Development Engineer (CPDE) and the appropriate program manager (PGM) meet to discuss specific of the project and to plan for the appointment of a project manager. If the project is to be managed by a district design engineer, the appropriate District Administrator (DA) will also meet with CPDE and PGM.
2. CPDE or DA appoints a project manager (PMDD) from the Project Development Division or the appropriate district.
3. PMDD contacts DOTD Environmental Engineer to plan necessary steps towards meeting the requirements for the CE. This early involvement is required so that the environmental process necessary to complete a CE can be built into the Project Plan.
4. PMDD becomes familiar with all project related information regarding the project scope and conditions unique to the project. PMDD meets with the PGM to discuss project-specific issues.
5. PMDD establishes a preliminary Project Plan (see Appendix I for more information). This plan will include the outline of a scope of work for Stage 1 and 3 activities. This project plan must clearly identify all activities to be performed in Stage 1 and those to be performed in Stage. This scope of work will further identify tasks to be performed by DOTD staff from headquarters and the district. **Identified Stage 3 activities are not to be undertaken while the project is in Stage 1.**
6. PMDD meets with managers of various functional areas (road, bridge, right-of-way, etc.) to seek input regarding the Project Plan and to discuss appointment of team members for Stage 1 and 3 activities. **Appointment of project team members at this point is not to be interpreted as initiating Stage 3 activities while the project is in Stage 1.**
7. PMDD finalizes scope of work, establishes preliminary time line for Stage 1 activities and develops an estimate for Stage 1 cost.
8. PMDD develop a detailed schedule of activities using the Program Project Management System (PPMS) and identifies candidate task managers for various project tasks.
9. PMDD negotiates assignment of DOTD task managers with appropriate functional managers. PMDD finalizes assignment of task managers.

10. PMDD holds a project initiation meeting with all team members and maps out the project plan.
11. PMDD finalizes the financial plans with the “banker.”
12. Project is initiated.

# Glossary

**CE:** Categorical Exclusion

**Construction Contract Administration Manual:** a reference for project engineers regarding the delivery of final estimates.

**CPM:** Critical Path Method; a deterministic scheduling tool that concentrates only on the activities critical to the project, in contrast to all activities.

**EA:** Environmental Assessment

**EE:** Environmental Exclusion

**EEA:** Environmental Engineer Administrator

**EF:** Environmental Finding

**EIS:** Environmental Impact Statement

**ER:** Environmental Record

**FONSI:** Finding of No Significant Impact

**Gant Charts:** elementary project scheduling tools that consist of a time scale and wide bars representing activities and tasks.

**Highway Selection Process:** a formalized process through which competing projects are prioritized and funded.

**ITS:** Intelligent Transportation Systems

**LA DEQ:** Louisiana Department of Environmental Quality

**LA DNR:** Louisiana Department of Natural Resources

**LA WL&F:** Louisiana Department of Wildlife and Fisheries

**“Mega” projects:** projects that will require dedicated funding since they cannot reasonably be entirely funded under the annual Highway Priority Program

**MPO:** Metropolitan Planning Organization

**NEPA:** National Environmental Policy Act

**PERT:** Program Evaluation and Review Technique ; a project scheduling tool based on the CPM method.

**PDD:** Project Delivery Date

**PFC:** Project Finance Committee (also referred to as “banker”)

**PGM:** Program Manager

**PM:** Project Manager

**PMDD:** Project Manager from Project Development Division

**PMPP:** Project Manager from Office of Planning and Programming

**PPMS:** Program and Project Management System; allows DOTD to more effectively and efficiently develop, manage, track, and report on projects.

**“Regular Projects”:** projects that can reasonably be funded under the annual Highway Priority Program, subject to competition with other projects in the same category.

**ROD:** Record of Decision

**Scope and Budget Memorandum:** document produced in Stage 1 that includes a description of the project and selected alternative; funding estimates for full project implementation; a list of commitments, agreements, and permits; and approval signatures.

**Standard Specification:** *Louisiana Standard Specifications for Roads and Bridges* (2000 ed.) is approved for use on construction contracts awarded by DOTD and other governing bodies.

**STIP:** State Transportation Improvement Program

**TIMED:** Transportation Infrastructure Model for Economic Development